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Qatar Foundation: EPC of SCADA System at Education City

City & Facility Management

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Qatar Foundation

Unlocking Human Potential

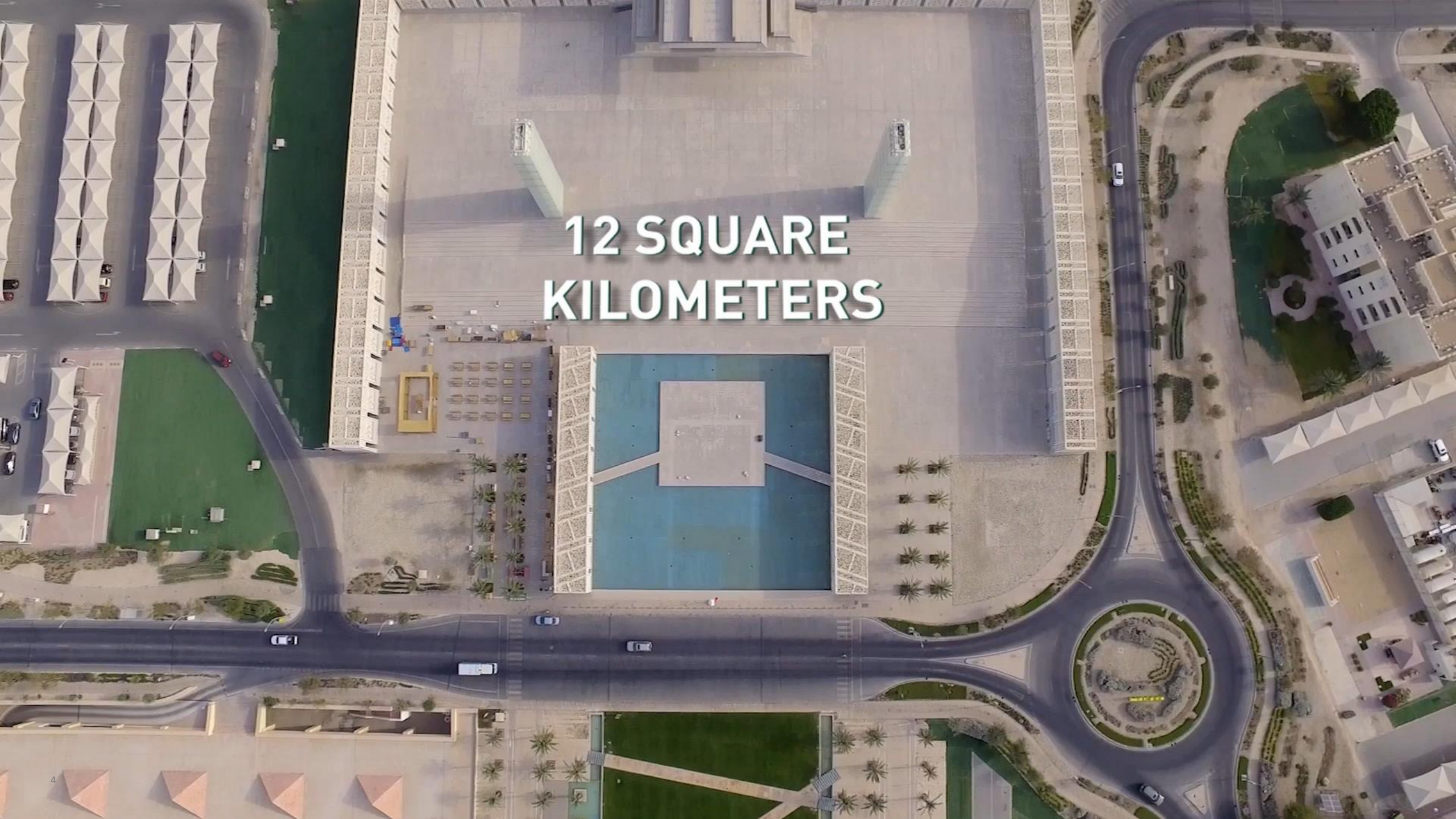
مؤسسة قطر
Qatar Foundation

Qatar Foundation for Education, Science and Community Development (QF) was established in 1995 by:

- His Highness, The Father Emir, Sheikh Hamad Bin Khalifa Al Thani
- Her Highness, Sheikha Moza Bint Nasser Al Misnad (Chairperson)

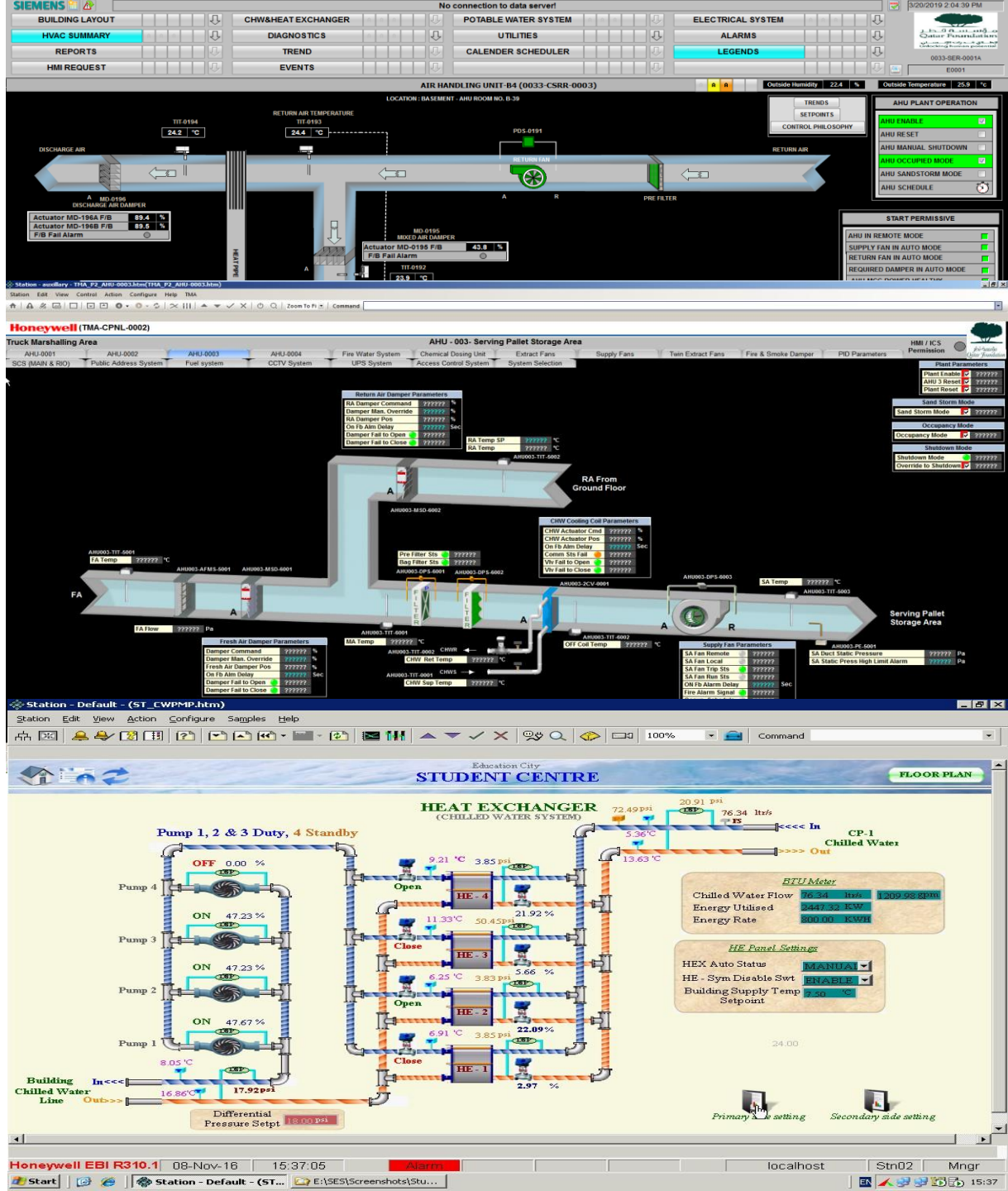
QF is a non-profit organization where centers and programs focused on education, research, innovation, and community development intertwine for the benefit of Qatar, and the world.

AVEVA


12 SQUARE
KILOMETERS

The challenge

- Many facilities have their local BMS from different manufacturers
- An OWS from every facility is added in the 2 Central Control Rooms (CCR) of Education City
- South Campus facilities were connected to CCR 1
- North Campus facilities were connected to CCR 2
- Individual OWS to monitor and control every facility in the CCR has made the CCR very cluttered
- Manual energy recording and reporting are followed
- Not able to determine cooling energy wastages due to improper scheduling and not having energy management is place
- A lot of manpower were needed to locally monitor and control every facility

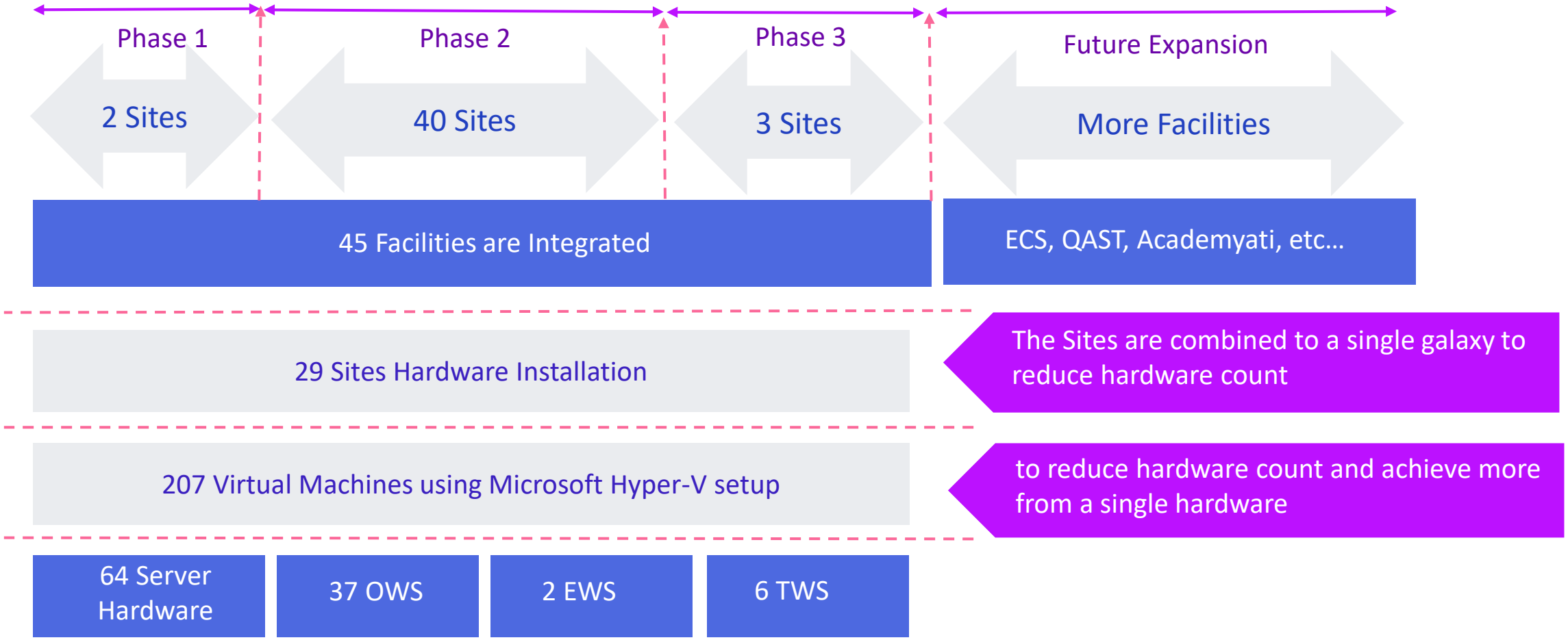


Various BMS at Education City Facilities

Facility Name	OEM	BMS
Central Plant 1	Schneider	EcoStruxure
Central Plant 1 Utility Tunnel		
North Utility Tunnel	Honeywell	EPKS
Central Plant 2	Honeywell	EBI
CP2 Utility Tunnel	Honeywell	EBI
TMA	Honeywell	EPKS
Central Plant 3	Honeywell	EPKS
Al Shaqab	Honeywell	EBI
CP4 utility tunnel	Honeywell	EBI
Central Plant 4	Honeywell	EBI
Central Plant 5	Siemens	WinCC
Central Plant 6	Honeywell	EPKS
South Utility Tunnel	Siemens	WinCC
Central Plant 7	Siemens	WinCC
Convention Centre (QNCC) & QNCC Extension	Honeywell	EBI
QNCC Carpark	Honeywell	EBI
QSTP - ITTC1	Honeywell	EBI
QSTP - ITTC2	Honeywell	EBI
College of Media and Communication (CMC)	Siemens	WinCC
School of Islamic Studies (QFIS)	Honeywell	EBI
Male Student Housing	Honeywell	EBI
Female Student Housing	Honeywell	EBI
AWSAJ		
Strategic Studies Centre (HQ -SSC)	Siemens	WinCC
QF Headquarters	Siemens	WinCC
Central Library/ QNL	Honeywell	EPKS
Student Centre	Honeywell	EBI
Oxygen Park Area	Siemens	WinCC
NEUCP	Siemens	WinCC
TAMU	Honeywell	EBI
Tech 4	Honeywell	EBI
Research & Development Complex	Siemens	WinCC
VCU	Honeywell	EBI
Western Green Spine	AVEVA	Plant SCADA (Citect)
West Car Park	Siemens	WinCC
Carousel	AVEVA	InTouch (Wonderware)
School of Foreign Service (GU)	Siemens	Desigo
Aljazeera Children	Schneider	EcoStruxure
College of Liberal Arts & Science (LAS)	Schneider	EcoStruxure
Ceremonial Court - Trend	Schneider	EcoStruxure
College of Medicine (WCMC)	Schneider	EcoStruxure
Carnegie Mellon University	Honeywell	EBI

Project overview

45 facilities are integrated to SCADA with independent local control & Centralized control from CCR



The solution - AVEVA components

Addressing the needs of centralized monitoring and control

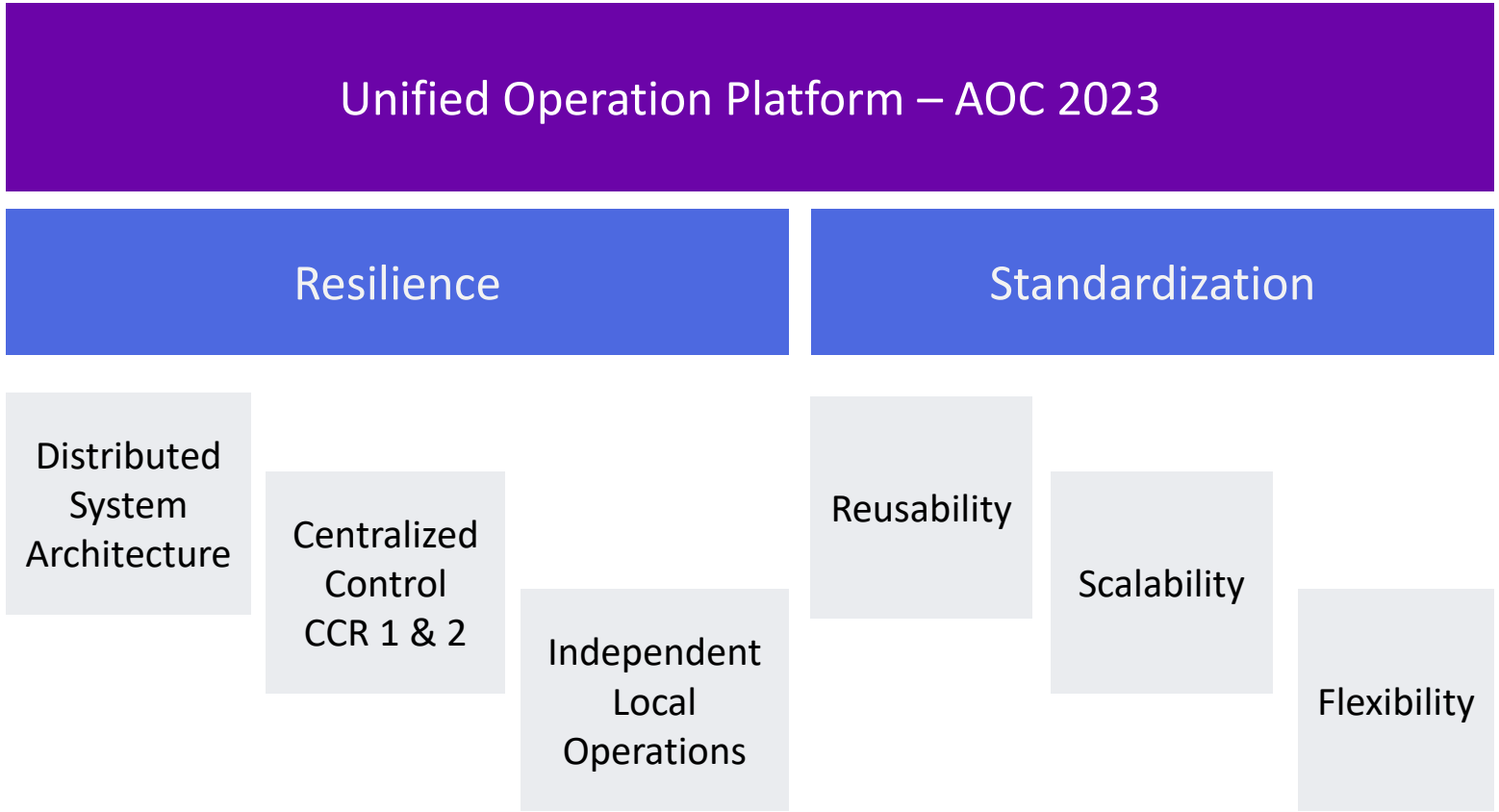
- **Foundation**
  - AVEVA Operations Control 2023
    - Redundancy
    - Scalability
    - Security
- **Visualization**
  - AVEVA Intouch HMI
    - HMI software for control room
  - AVEVA Intouch Access Anywhere
    - For remote monitoring from inside and outside QF
  - Alarm management
  - Trends
- **Tools for Operations**
  - AVEVA Historian
  - Custom Reports using AVEVA Reports for Operations
  - Automated Daily, Monthly Reports generation & delivery using email
  - CAFM Integration for raising work request directly from AOC 2023
  - Custom time-based scheduler

SCADA design guidelines and principles

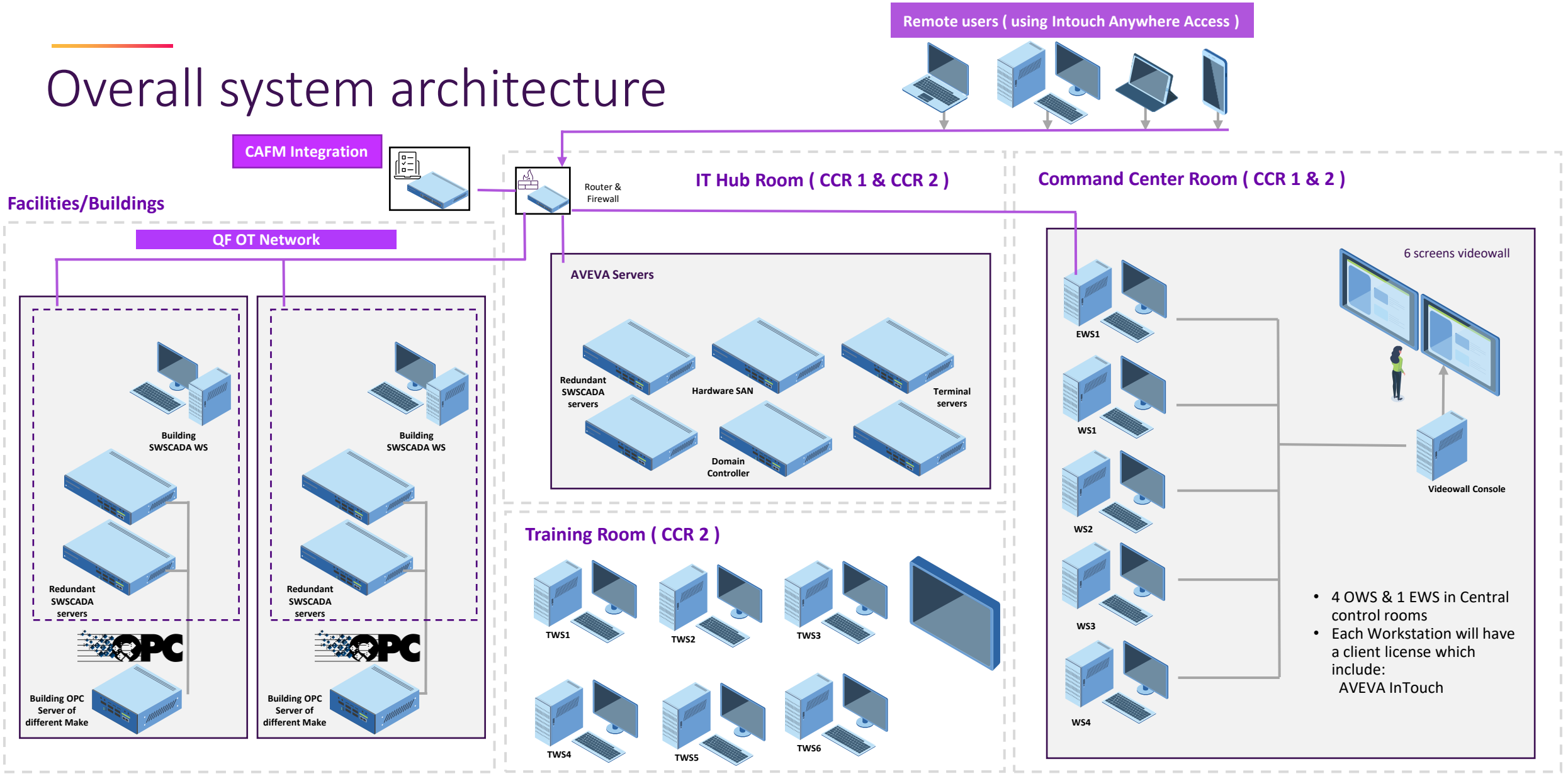
The Master Solution incorporates existing guidelines and standards from industry best practices, AVEVA Software development practices, and Qatar Foundation Standards to deliver the SCADA system.

Design Guidelines and Principles

- Centralized Control and Independent local operations
- Simplify and streamline
- Accessible by operators from remote
- High Availability
- Redundant solution
- Standardizing operations
- Minimizing energy usage through scheduling
- Scalable for future expansion



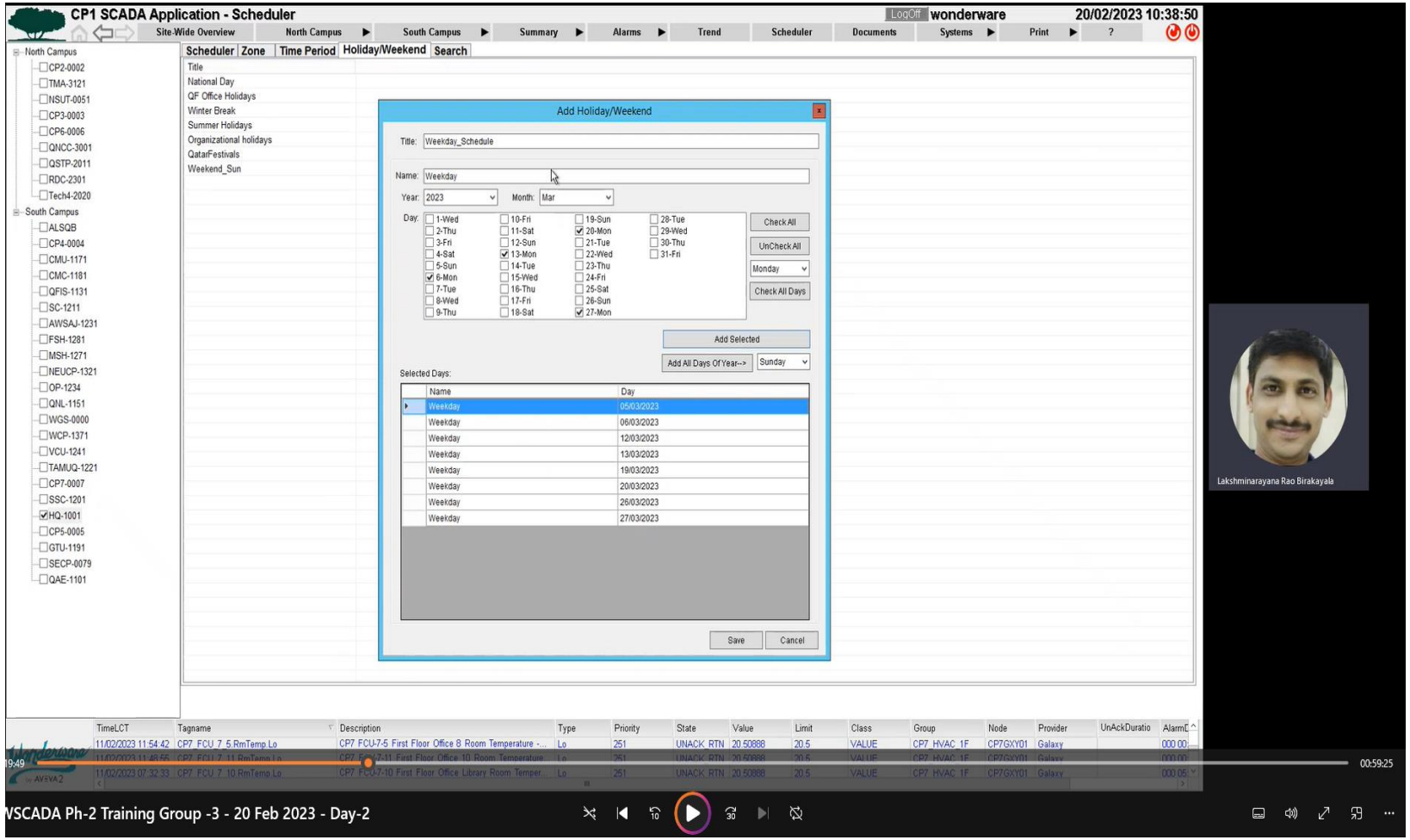
Overall system architecture

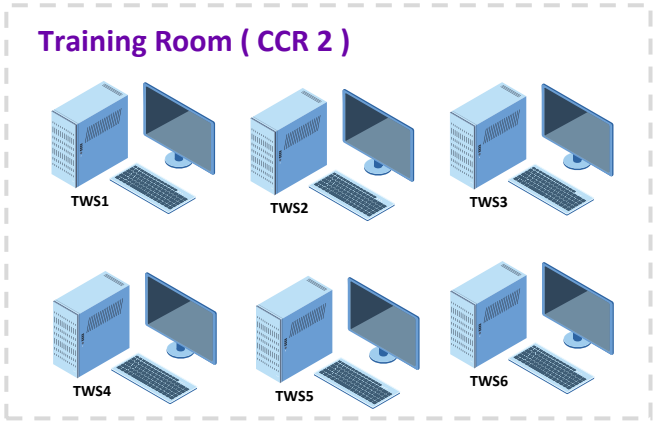


- 316,000 Data Points
- Upgraded to 500,000 licenses in total for future expansions

Training room

Trainings and Simulations using 6 TWS are performed in this room for the Operators / Supervisors





Operator training

Training and simulation

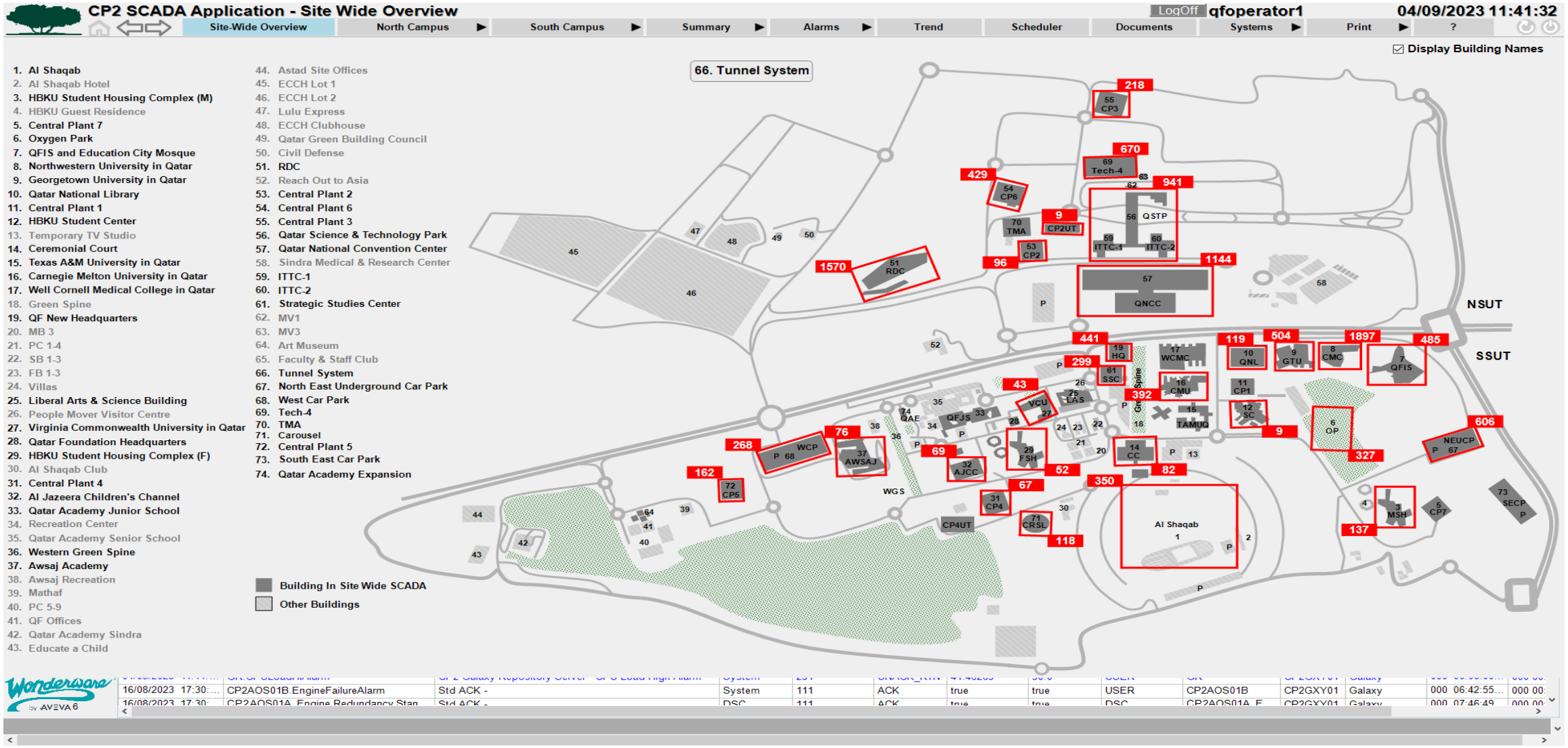
- Operators were given hands-on training on SCADA system by AVEVA certified trainer
- Operators were given in-depth knowledge on SCADA philosophies, design principles , Architecture , communication , navigation , alarm management , scheduling , reports , trend analysis, CAFM integration etc.
- Training recordings are made available for new operators
- Process simulation were also conducted for hands on experience

AVEVA InTouch HMI - overview

The following table lists the hierarchy of the SCADA application

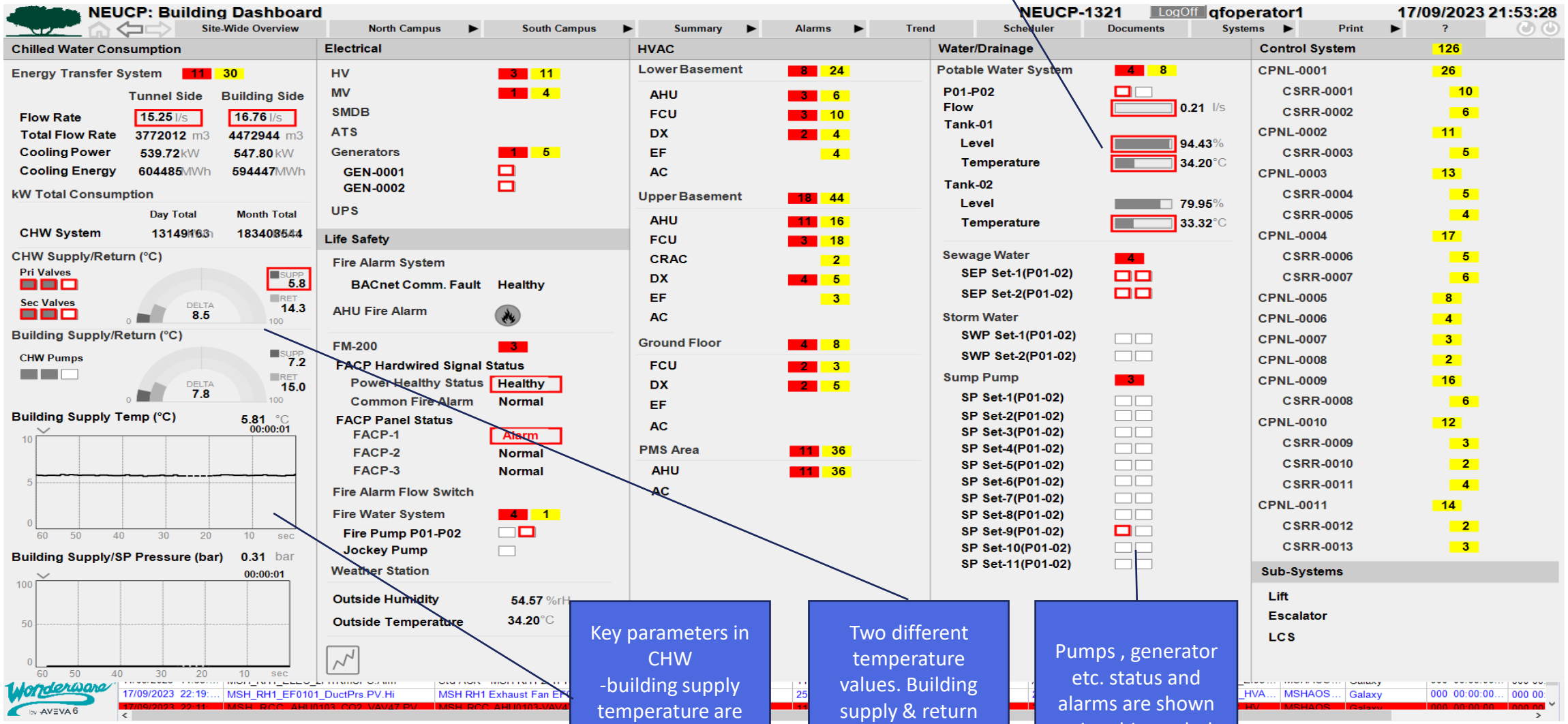
Style	Level	Description
Overview Map	0	Level 0 screen shows the Site Wide Overview gives a bird's eye view on Education City Masterplan where the facilities are mimicked as well as the total number of alarms associated with each facility
Facility Dashboard	1	Level 1 Building Dashboard shows KPIs for the entire facility , subsections includes CHW , HVAC , Electrical , Life safety etc.
Equipment Dashboard	2	Level 2 screens contain objects depicting KPIs for equipment in each facility / floor
Process Graphics	3	Level 3 screens typically provide detail on a specific piece of equipment, process, or area
Faceplate	4	Level 4 screens are pop-up style screens that are displayed when the user clicks on a component

Level 0 – Site Wide Overview



Level 1 – Building Dashboard

Water tank level, pressure is displayed using this bar indicator

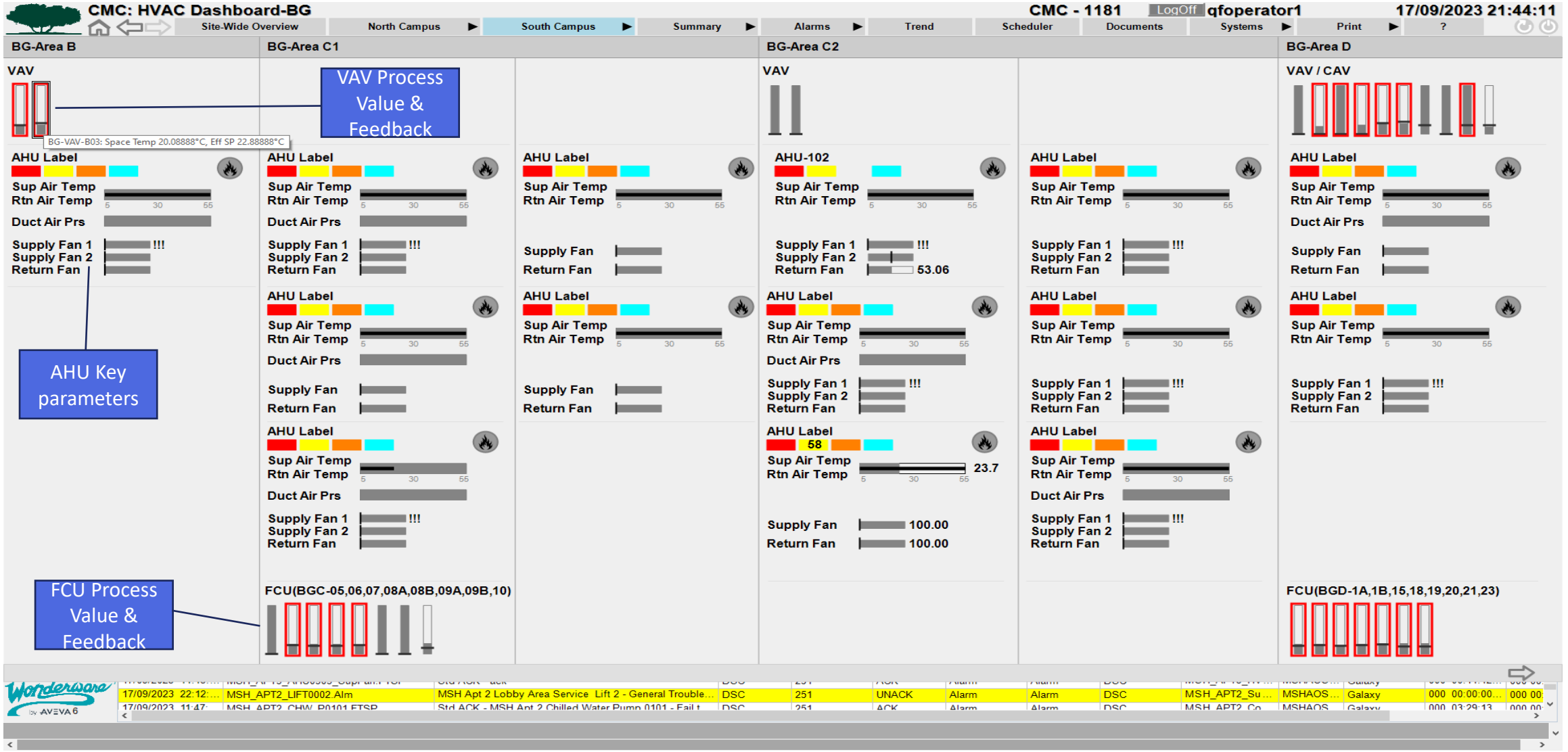


Key parameters in CHW -building supply temperature are displayed in the form of trend.

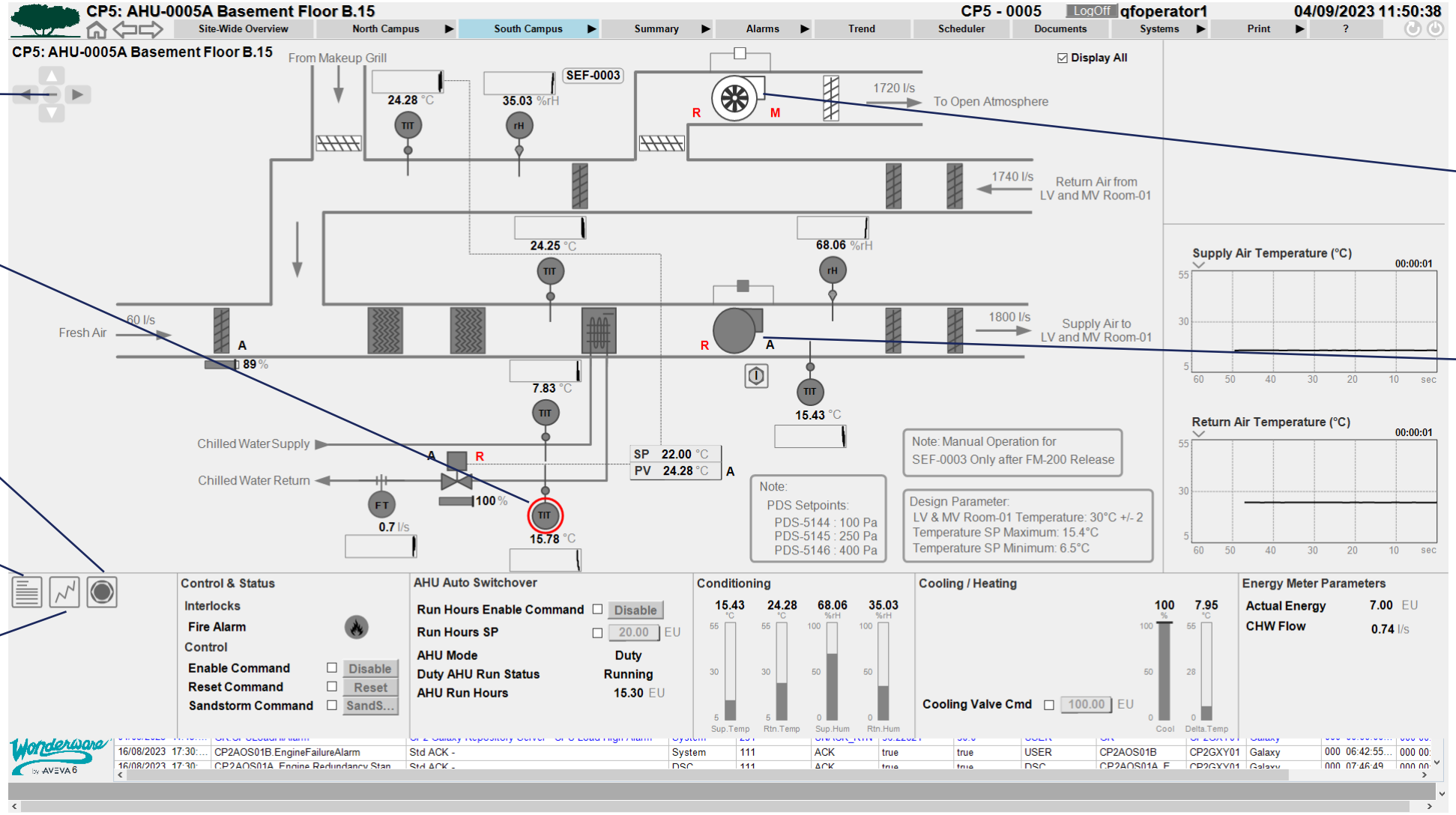
Two different temperature values. Building supply & return and its difference (delta) is displayed.

Pumps , generator etc. status and alarms are shown using this symbol

Level 2 – Equipment Dashboard



Level 3 – Process Graphics



Star Navigation

If any alarm is active in the equipment, then a red border appears

Control Faceplate

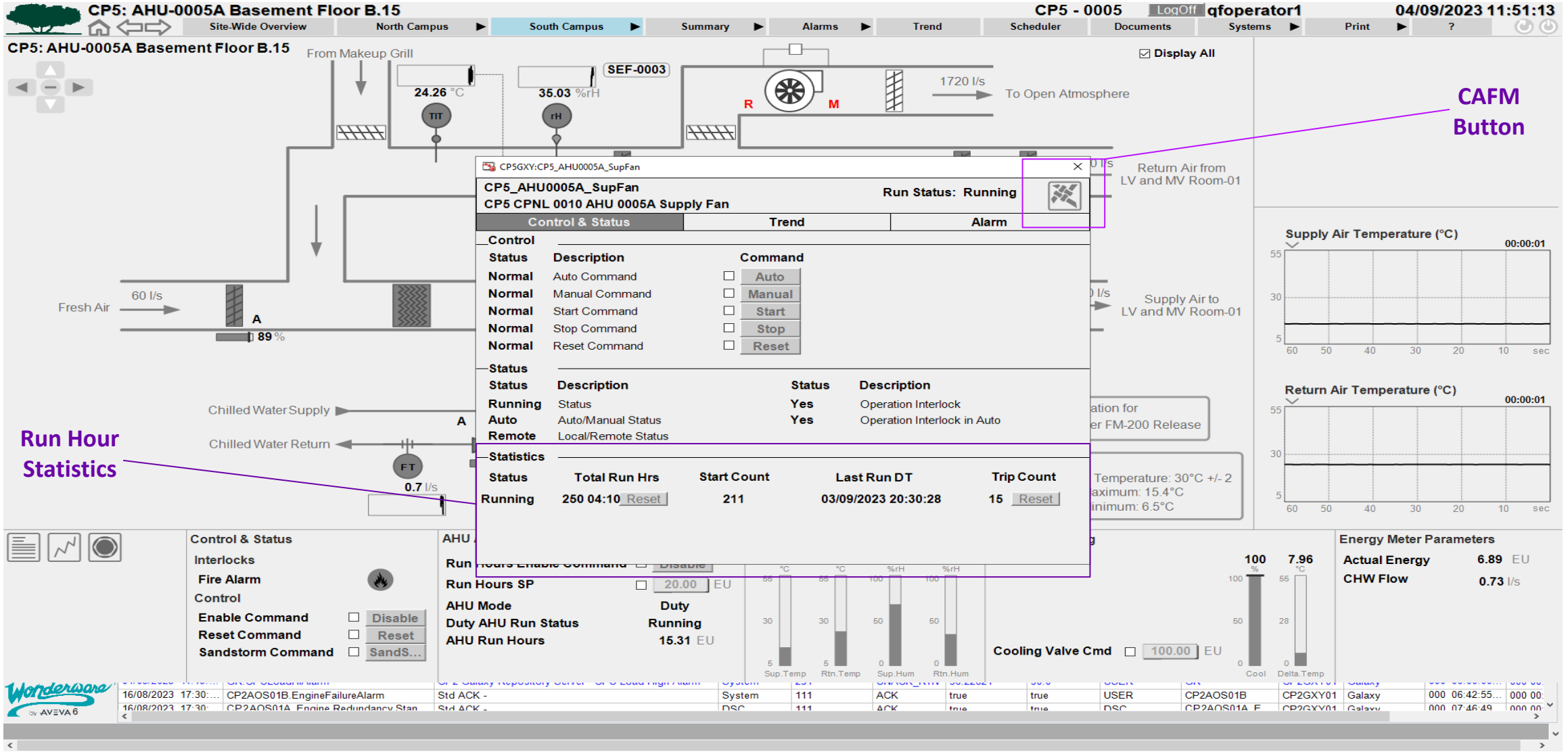
Document Viewer

Page Trend

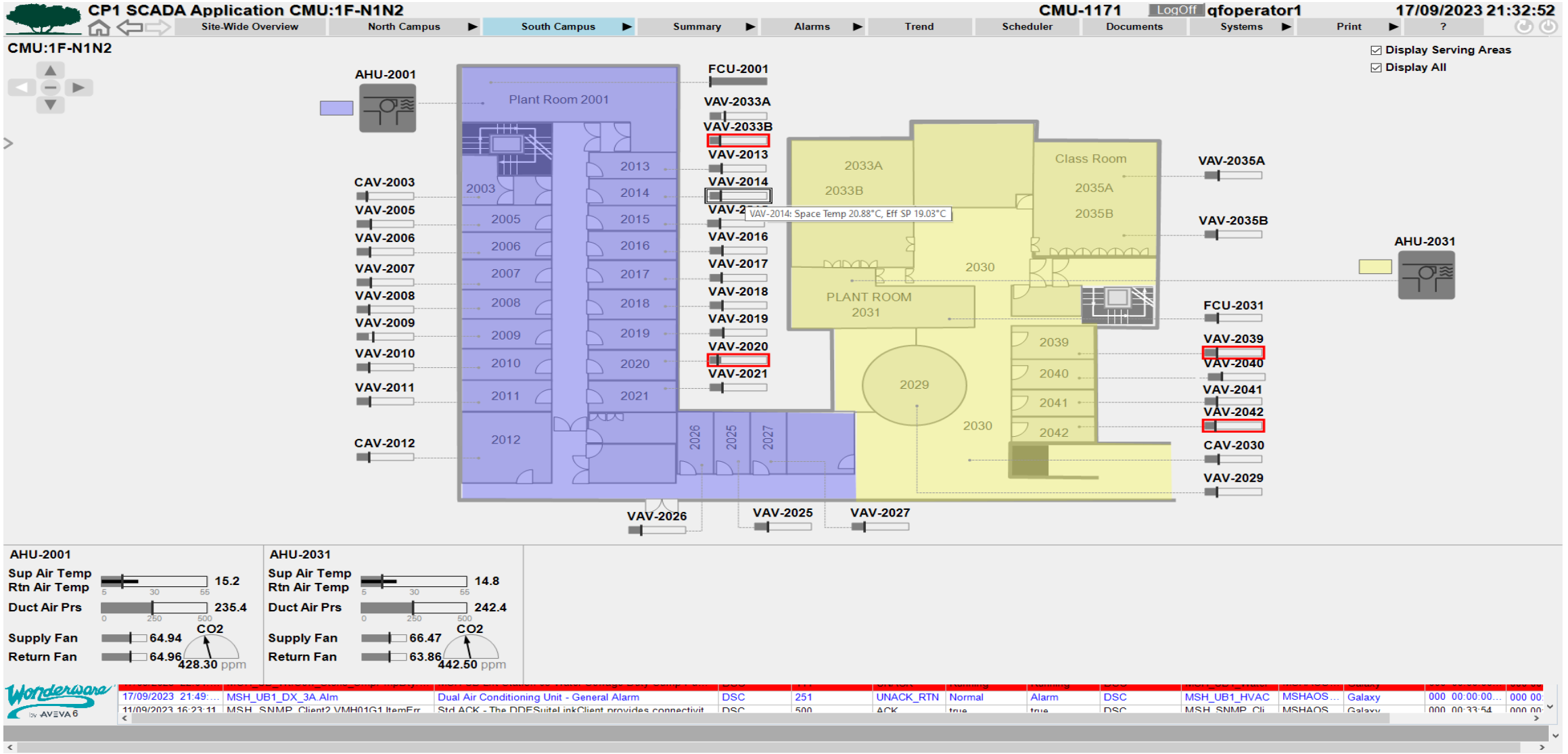
White color displays the equipment is not running

Grey color shows the equipment is running

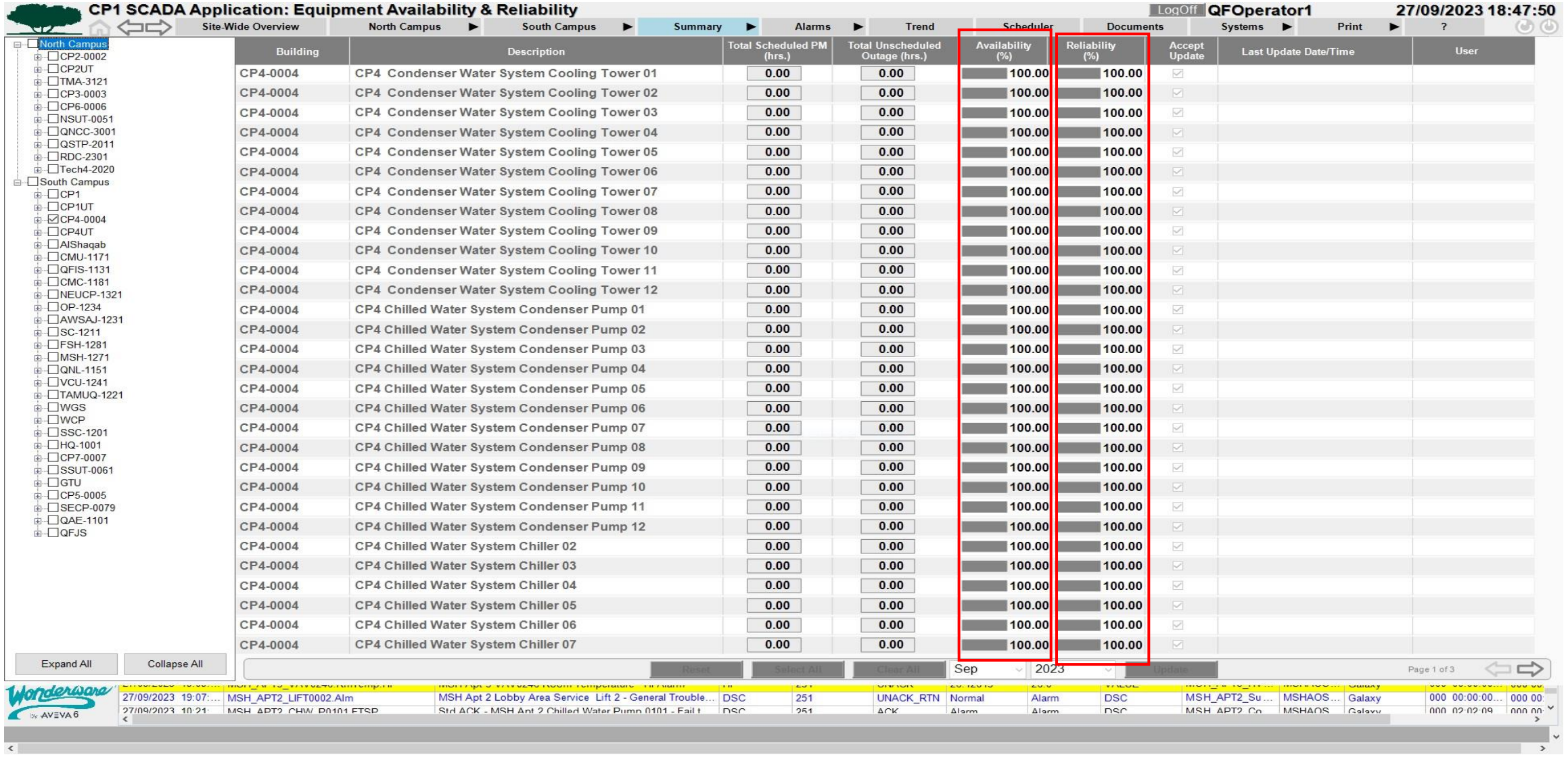
Level 4 – Faceplate



Better Visibility - Floor Plan Screen

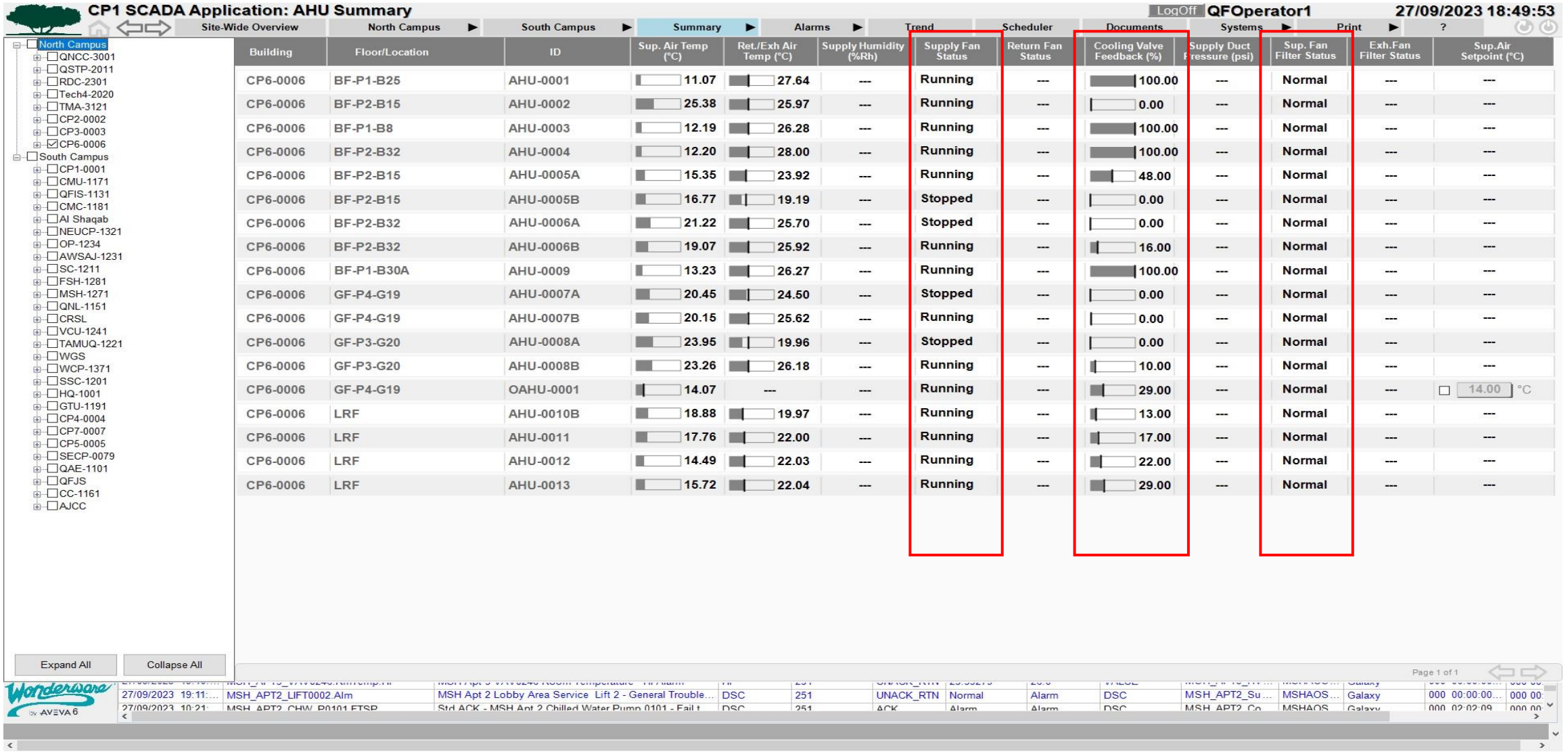


Better Visibility – Equipment Availability and Reliability



Building	Description	Total Scheduled PM (hrs.)	Total Unscheduled Outage (hrs.)	Availability (%)	Reliability (%)	Accept Update	Last Update Date/Time	User
CP4-0004	CP4 Condenser Water System Cooling Tower 01	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Condenser Water System Cooling Tower 02	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Condenser Water System Cooling Tower 03	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Condenser Water System Cooling Tower 04	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Condenser Water System Cooling Tower 05	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Condenser Water System Cooling Tower 06	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Condenser Water System Cooling Tower 07	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Condenser Water System Cooling Tower 08	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Condenser Water System Cooling Tower 09	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Condenser Water System Cooling Tower 10	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Condenser Water System Cooling Tower 11	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Condenser Water System Cooling Tower 12	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Chilled Water System Condenser Pump 01	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Chilled Water System Condenser Pump 02	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Chilled Water System Condenser Pump 03	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Chilled Water System Condenser Pump 04	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Chilled Water System Condenser Pump 05	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Chilled Water System Condenser Pump 06	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Chilled Water System Condenser Pump 07	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Chilled Water System Condenser Pump 08	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Chilled Water System Condenser Pump 09	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Chilled Water System Condenser Pump 10	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Chilled Water System Condenser Pump 11	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Chilled Water System Condenser Pump 12	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Chilled Water System Chiller 02	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Chilled Water System Chiller 03	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Chilled Water System Chiller 04	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Chilled Water System Chiller 05	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Chilled Water System Chiller 06	0.00	0.00	100.00	100.00	☑		
CP4-0004	CP4 Chilled Water System Chiller 07	0.00	0.00	100.00	100.00	☑		

Better Visibility – Equipment Summary



Custom reporting and analysis

AVEVA Reports for Operations (Dream Report) are used as the Custom Report Tool

- Key Features
  - Leverages all archives from other solutions and applications such as SCADA, Historians
  - Integrates in one user-friendly environment all tools to easily create and generate automated Reports
  - Enables Print, Archive, Email and Reports Publishing over the web automatically

- Custom Automatic Reports configured currently are:
  - Central plants Daily Reports
  - Central Plants Monthly Reports
  - Flow Meter Reports
  - Alarms Report
  - Facilities Daily & Monthly Reports

Automatic Custom Reports for Cooling Energy Analysis

Qatar Foundation - Education City - Site Wide SCADA - CP2 Daily Report
CP5 Operations Report - DAILY

Report Period : 02/09/2023

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Qatar Foundation

CP5- Equipment Status

ID / Equipment	01	02	03	04	05	06	07	08	09	10
	Chiller Train - 01		Chiller Train - 02		Chiller Train - 03		Chiller Train - 04		Chiller Train - 05	
Chiller Status	OFF	OFF	R	R	OFF	OFF	R	R	R	R
Chiller Last Run Date & Time	10/13/2022 03:17:53 AM	10/13/2022 03:17:54 AM	10/13/2022 10:59:28 AM	10/13/2022 10:55:13 AM	11/18/2022 03:00:54 AM	11/17/2022 04:11:58 PM	10/13/2022 03:17:54 AM	10/13/2022 03:17:54 AM	10/26/2022 09:44:27 AM	10/26/2022 09:41:28 AM
Chiller Load (%)	0	1	94	89	2	0	87	86	88	83
Cooling Towers Status	OFF	OFF	OFF	OFF	OFF	R	OFF	R	R	R
Cooling Towers (VFD-Speed %)	0	0	0	0	0	50	0	15	50	46
Condenser Pumps	OFF	OFF	OFF	R	R	R	OFF	OFF	OFF	OFF
Primary pumps Status	R	OFF	OFF	OFF	R	R	R	OFF	OFF	OFF
Secondary pumps Status	OFF	OFF	R	OFF	R	OFF	OFF	---	---	---
Secondary pumps (VFD-Speed %)	0	0	41	0	41	0	0	----	---	---
Tertiary pumps Status	OFF	R	---	---	---	---	---	---	---	---

A=Available; NA= Not Available;OFF = Not Running; R= Running; L=Local; REM = Remote; RM= Manual; RA= Auto; --- = Not Installed;N/A = Bad value

AVEVA

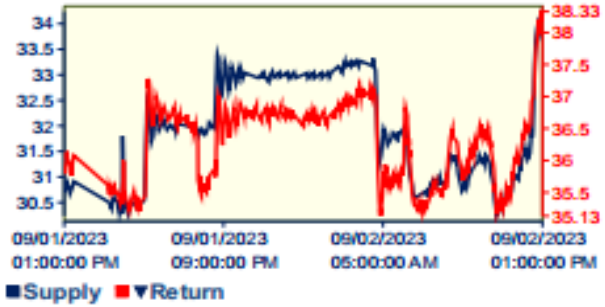
Qatar Foundation - Education City - Site Wide SCADA - CP2 Daily Report
CP5 Operations Report - DAILY

Report Period : 02/09/2023

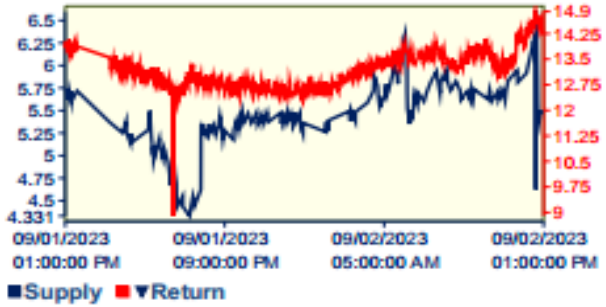
Parameters	Parameters	Actual Values
Chilled Water System		
Supply To Load Temp. (°C)	5.5	8.4
Return From Load Temp.(°C)	14.5	15.2
Secondary Water Flow (gpm)	9874 gpm/Pump	691.90
Secondary D.P.-1 (Pa)	2.2	0.73
Secondary D.P.-2 (Pa)	2.2	0.2
Primary Water Flow (gpm)	5663 gpm/Pump	N/A
Condenser System		
Wet Bulb Temperature (°C)	-	24.3
Condenser Water Flow (gpm)	11983 gpm/Pump	N/A
Supply to Cooling Tower Temp (°C)	40.8	34.24
Return From Cooling Tower Temp (°C)	35	38.33
CT Make-Up Water Daily Consumption (m3)	-	1784042.62
CP5 Building Data		
Building CHW Tertiary DP (Pa)	0.9	2.05
Building CHW Total Flow (gpm)	835 gpm	53355426.85
CHW Bldg Sup/Rtn Temp. (°C)	6.5/15.4	8.4 / 15.2
CHW CP Sup/Rtn Temp. (°C)	5.5/14.4	5.5 / 14.2

* Readings are taken at 13:00 hrs

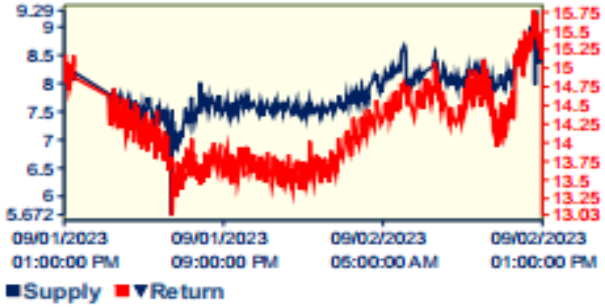
CP5- Cooling Tower Supply, Return (°C)



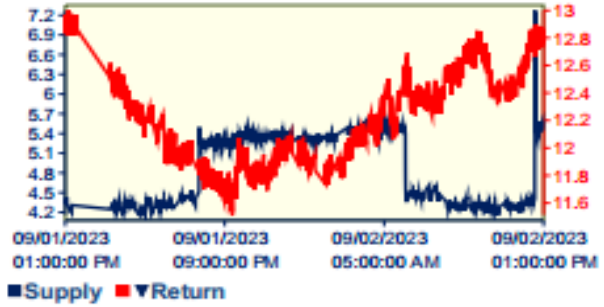
CP5- CP Supply, Return (°C)



CP5- Building Supply, Return (°C)



CP5- Secondary Pumps Supply, Return (°C)



Daily CHW Energy Calculation (kWh)	7702.20
Building Energy (TH)	296.35
District Energy (kWh)	309.32
Daily Tonnage Production (TH)	80773.12
Daily Cooling Energy Production (kWh)	284079.06

Make up Water Total Flow In (m3)	1782173.38
Make up Water Total Flow Out (m3)	1779762.88

NA= Not Available; Not Installed;N/A = Bad value

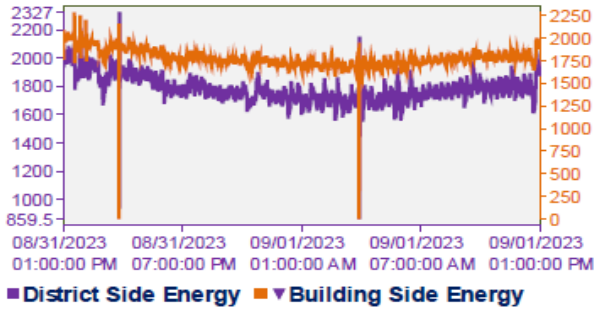
Qatar Foundation - Education City - Site Wide SCADA - CP2 Daily Report
CMC Chilled Water System Analysis - DAILY

Report Period : 01/09/2023

Parameters	Design Values/Setpoint	Actual Values
Chilled Water System		
CP side CHW Supply Temp. (°C)	5.5 - 14.5	5.2
CP side CHW Return Temp. (°C)	5.5 - 14.5	13.9
Building side CHW Supply Temp. (°C)	7.5 - 15.6	7.35
Building side CHW Return Temp. (°C)	7.5 - 15.6	15.30
CP side Flow (l/s)	2796 - 2773 gpm	823.7
Building side Flow (l/s)	2796 - 2773 gpm	894.74
Building CHW Tertiary DP	-	---

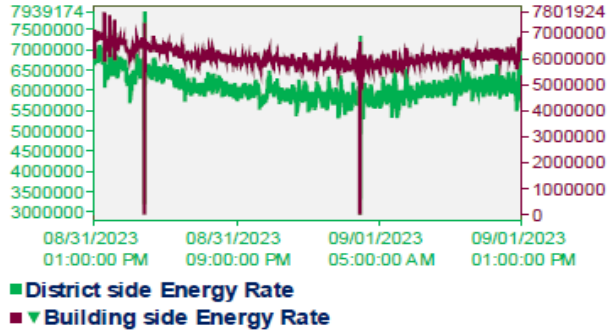
* Readings are taken at 13:00 hrs

CMC- District and Building side Energy (kW)

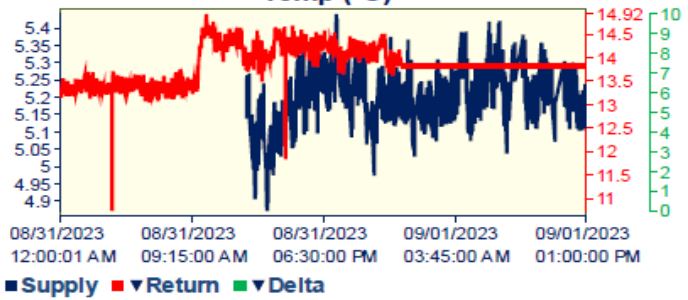


District Energy (kW)	1702.36
Building Energy (kW)	1686.44
Daily CHW Energy Calculation (kWh)	44464.43

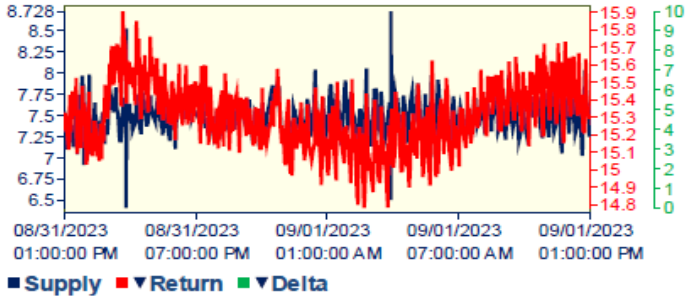
CMC- District and Building side Energy Rate (BTU/hr)



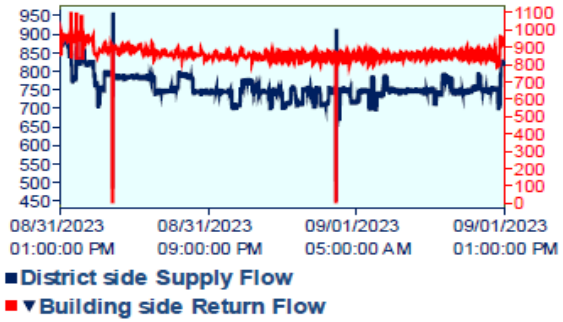
CMC - CP side Supply, Return & Delta Temp (°C)



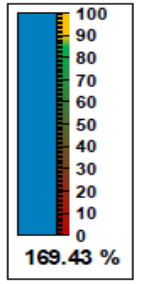
CMC - Building side Supply, Return & Delta Temp (°C)



CMC - District and Building side Flow (l/s)



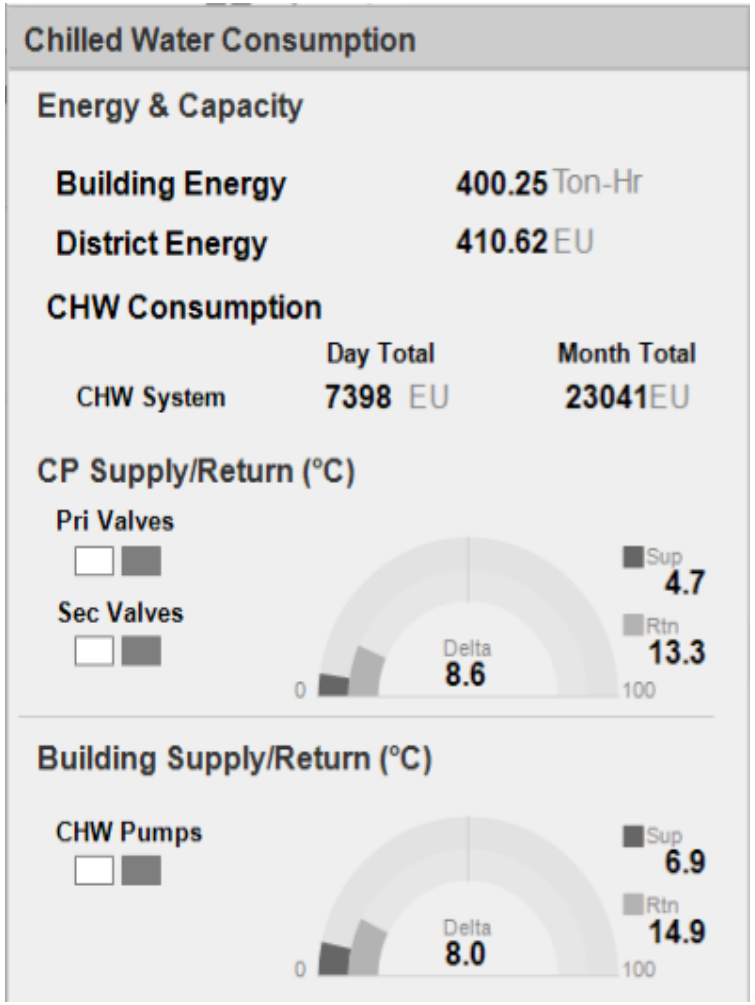
Potable Water Tank Cap: 90 m3

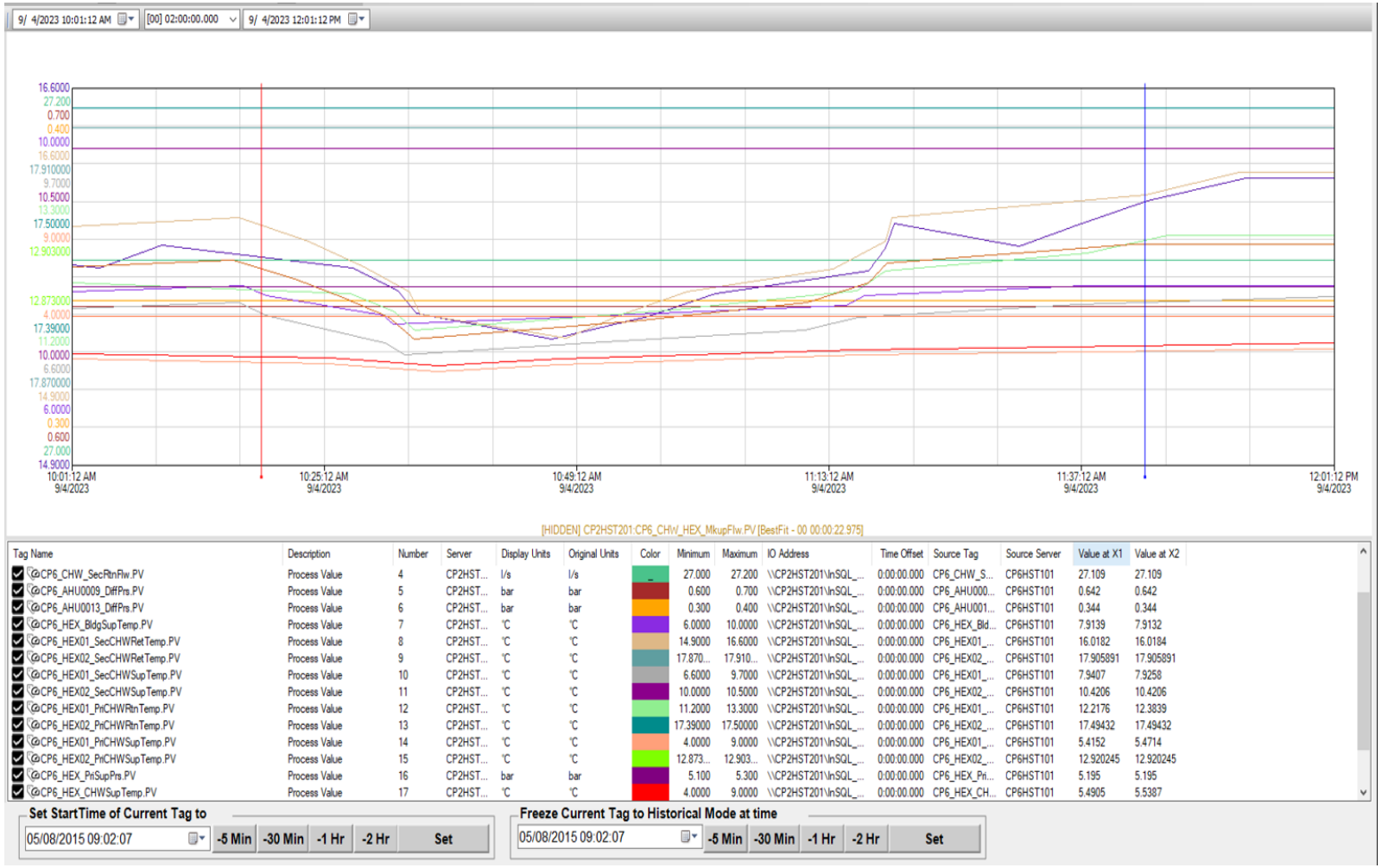


NA= Not Available; Not Installed;N/A = Bad value

Central Plant Energy Production Dashboard

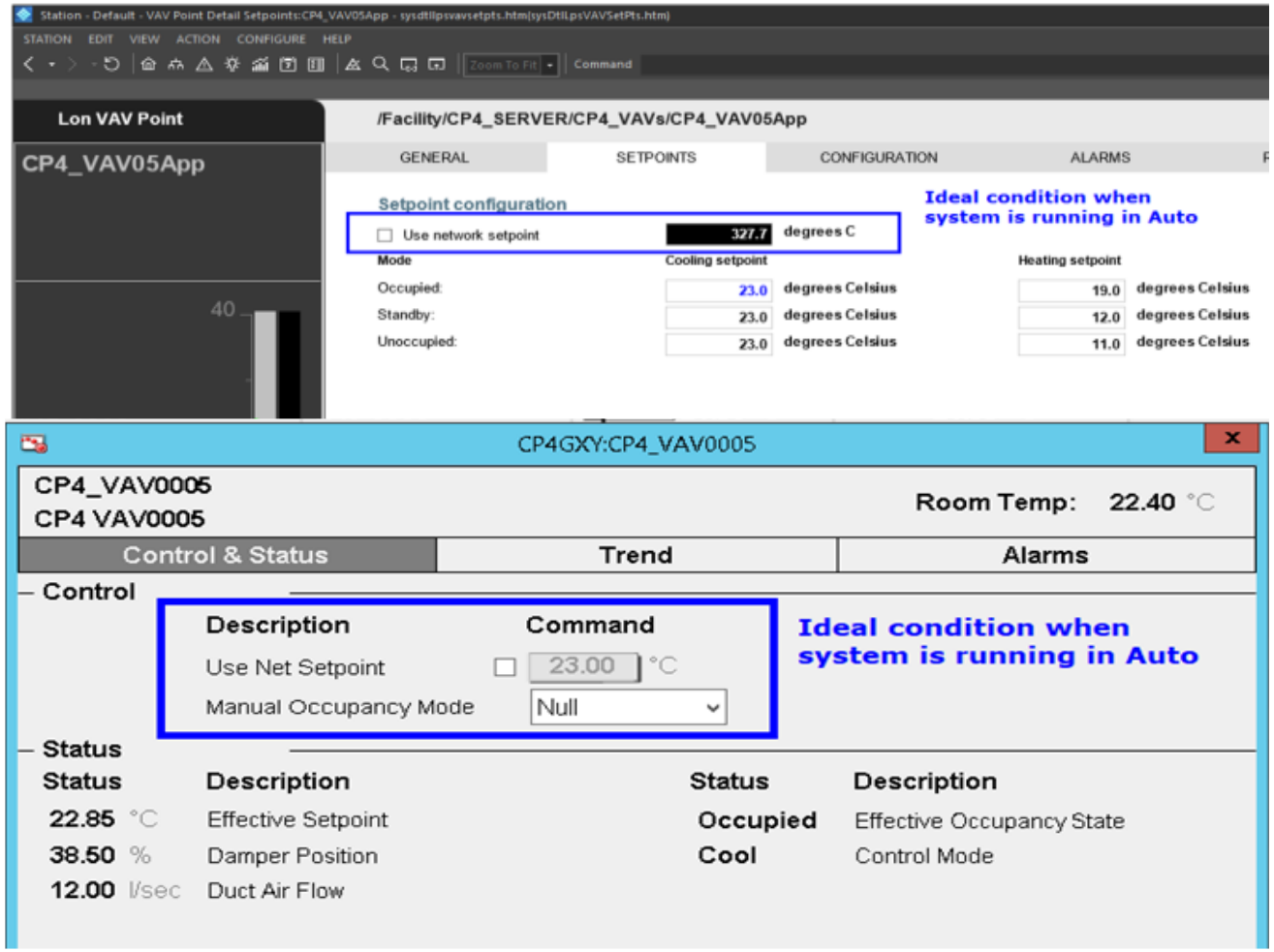
Central Plant Energy Consumption Dashboard and Trends





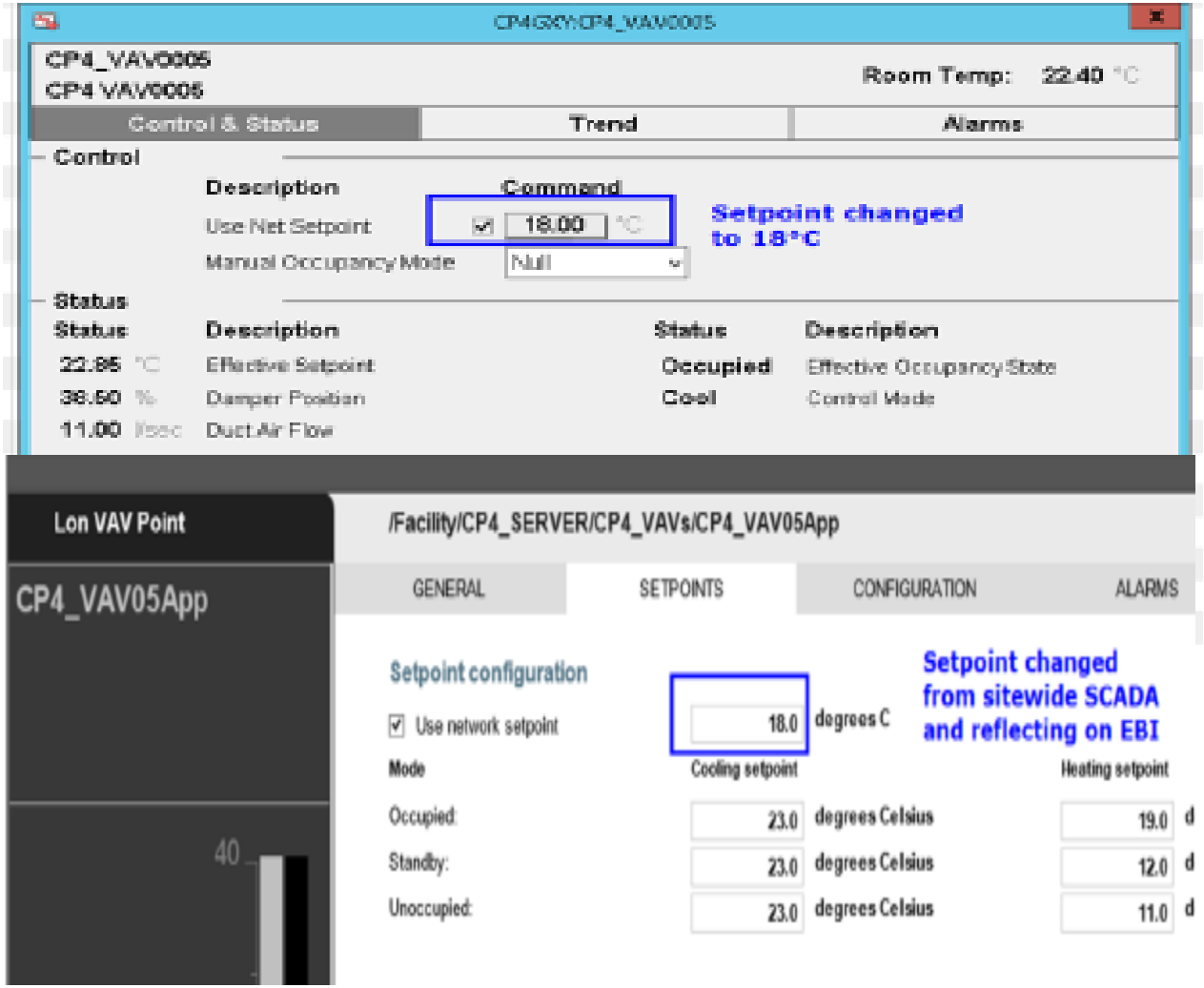
Remote Control of XL10 LON Controllers Network Setpoint from AOC 2023 – Challenge

- Use Network set point checkbox is utilized to allow the operator to input a set point from the Remote OWS when the checkbox is checked in the Local BMS
- The factory setting of this checkbox was disabled to prevent the Remote Operator from controlling the equipment
- The checkbox OPC I/O cannot be exposed for VAV, CAV, FCUs that are implemented using XL10 LON controllers in 6 facilities
- This check box could be accessed from the local BMS (EBI - Honeywell) only to change the controller settings



Remote Control of XL10 LON Controllers Network Setpoint from AOC 2023 – Challenge Resolution

- We have implemented scripts for VAV, CAV, FCU LONworks points in Local BMS to enable navigation to Instruction display screen whenever the check box is checked from AOC 2023 VAV/CAV/FCU faceplates
- Each VAV/CAV/FCU associated display points were modified for navigation to faceplates
- By doing these script changes in local BMS we were able to control Network Setpoints for VAV/CAV/FCU's equipped with LONworks XL10 controllers
- We have achieved considerable cost savings to Qatar Foundation



Water Meter Management

SWSCADA Flow Meter Report(Daily) - ALSQB

Report Period : 25/08/2023 12:59 PM To 26/08/2023 01:00 PM

مؤسسة قطر
Qatar Foundation

DAILY FLOW (l/s)

Item Name	Min	Max	Average
SSUT_ALSQB_FM1_FR.PV	0.93	17.86	8.51
SSUT_ALSQB_FM2_FR.PV	-0.95	91.23	26.57

DAILY TOTAL (m3)

Item Name	Total
SSUT_ALSQB_FM1_FR.Tot	733.47
SSUT_ALSQB_FM2_FR.Tot	2287.72

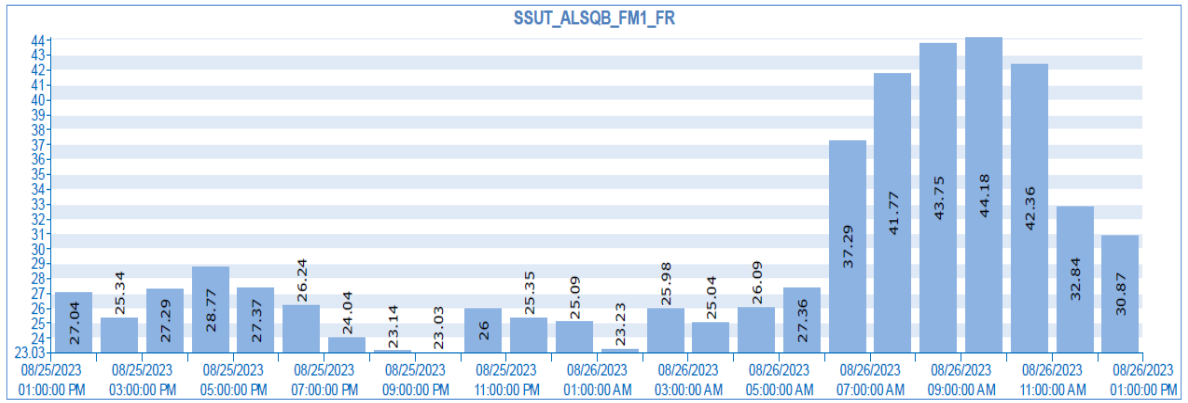
HOURLY TOTAL (m3)

Time	SSUT_ALSQB_FM1	SSUT_ALSQB_FM2	SysMin	SysHour
25/08/2023 14:00:00	27.04	5.10	0.00	0.00
25/08/2023 15:00:00	26.43	32.02	0.00	1.00
25/08/2023 16:00:00	28.34	53.34	0.00	1.00
25/08/2023 17:00:00	29.79	143.23	0.00	1.00
25/08/2023 18:00:00	28.38	118.51	0.00	1.00
25/08/2023 19:00:00	27.32	101.45	0.00	1.00
25/08/2023 20:00:00	25.04	76.25	0.00	1.00
25/08/2023 21:00:00	24.21	122.38	0.00	1.00
25/08/2023 22:00:00	24.09	20.57	0.00	1.00
25/08/2023 23:00:00	27.06	71.06	0.00	1.00
26/08/2023 00:00:00	26.37	114.31	0.00	1.00
26/08/2023 01:00:00	26.12	68.85	0.00	0.00
26/08/2023 02:00:00	24.31	162.63	0.00	1.00
26/08/2023 03:00:00	27.04	171.20	0.00	1.00
26/08/2023 04:00:00	26.07	204.32	0.00	1.00
26/08/2023 05:00:00	27.10	257.80	0.00	1.00
26/08/2023 06:00:00	28.41	146.33	0.00	1.00
26/08/2023 07:00:00	38.29	76.33	0.00	1.00
26/08/2023 08:00:00	42.80	100.47	0.00	0.00
26/08/2023 09:00:00	44.81	161.97	0.00	0.00
26/08/2023 10:00:00	45.25	44.89	0.00	0.00
26/08/2023 11:00:00	43.38	11.29	0.00	0.00
26/08/2023 12:00:00	33.93	13.23	0.00	0.00
26/08/2023 13:00:00	31.93	10.19	0.00	0.00

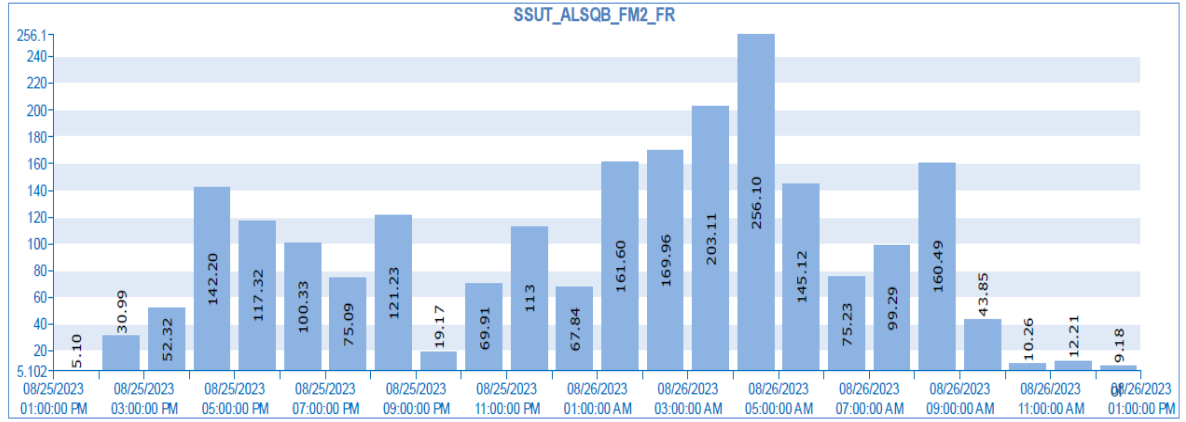
SWSCADA Flow Meter Report(Daily) - ALSQB

Report Period : 25/08/2023 12:59 PM To 26/08/2023 01:00 PM

HOURLY TOTAL (m3)



HOURLY TOTAL (m3)

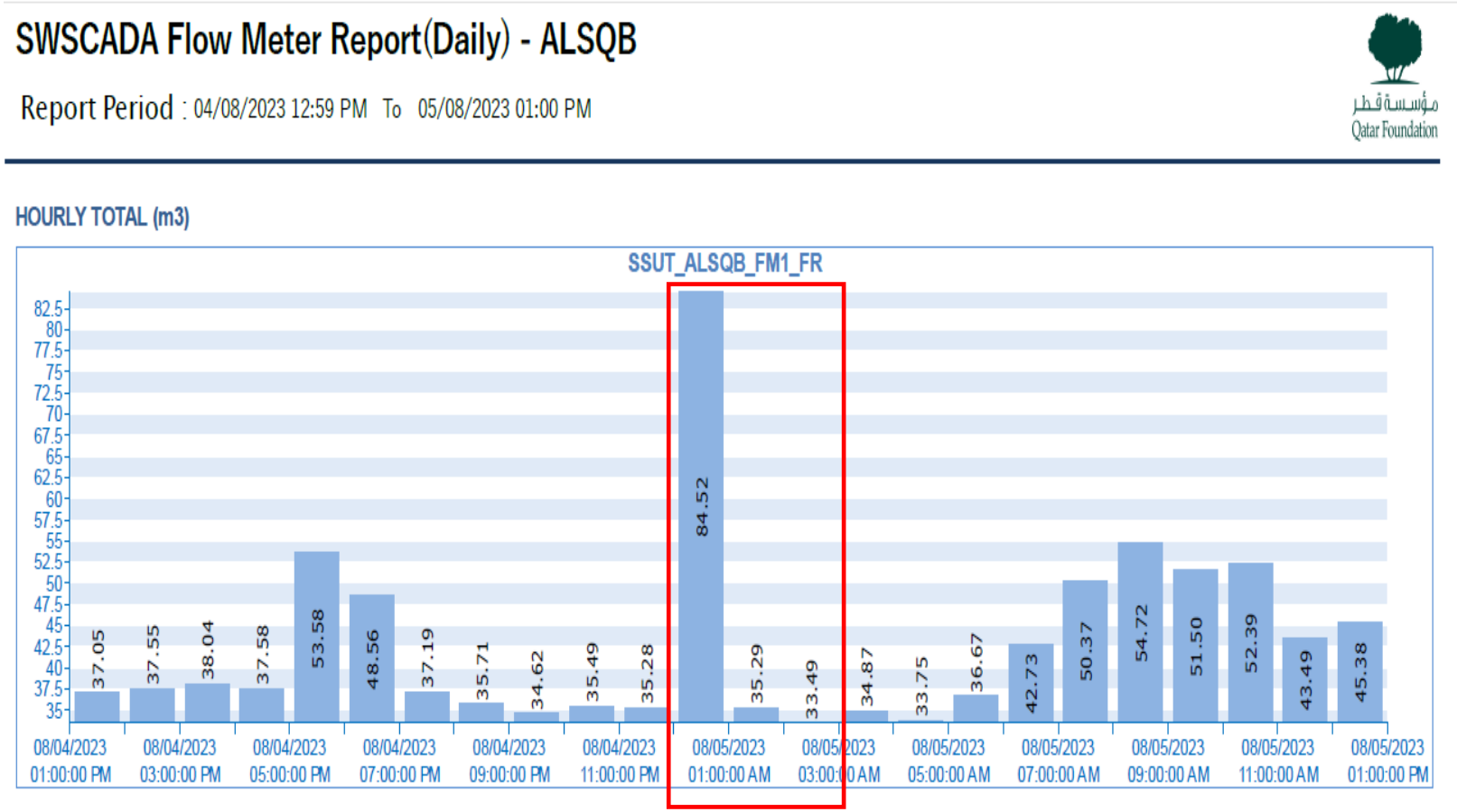


AVEVA

Water Meter Management

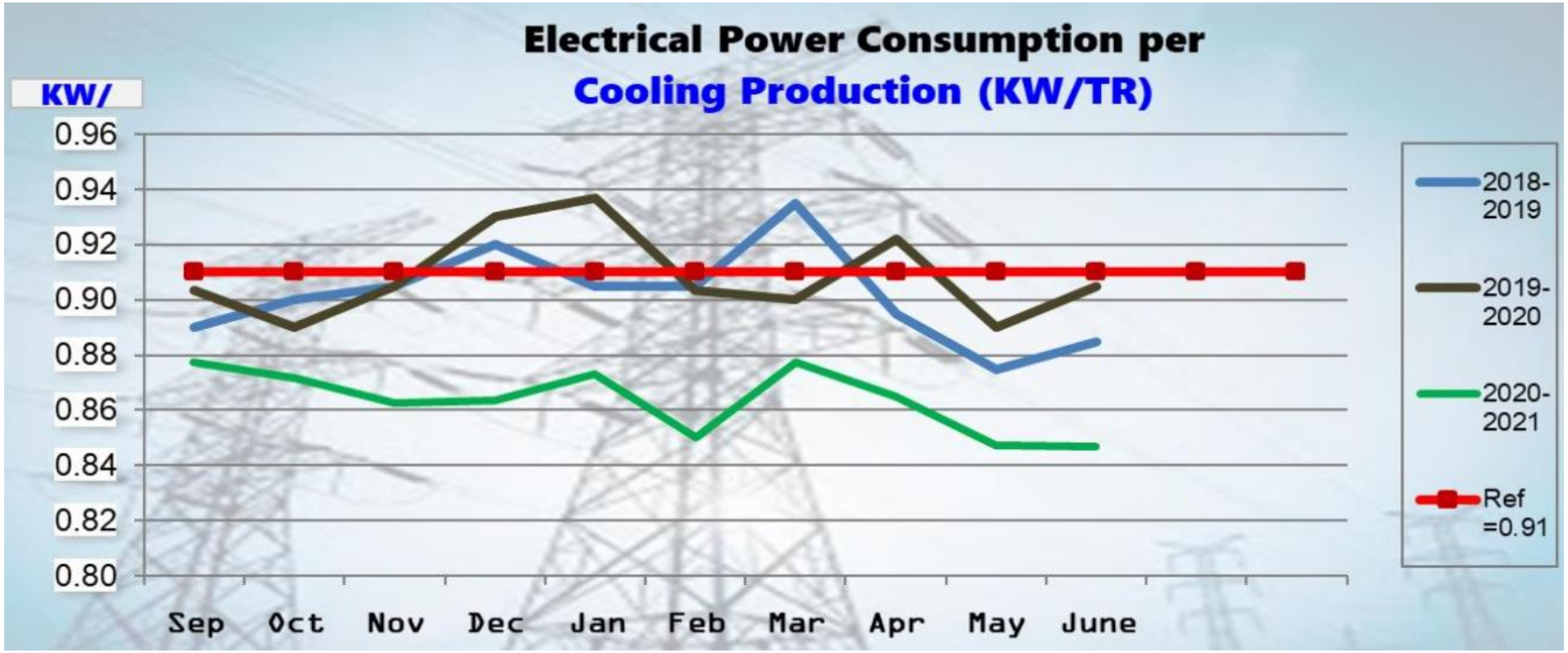
QF were able to identify a leakage in one of the sub header lines on 5th August 2023 utilizing the High Alarm set for Al Shaqab Flow meter

- Facilities water usage at night is less compared morning due to unoccupancy
- Average water usage at Al Shaqab facility is around 35 m^3/Hr at night
- On the 5th August 2023 at night water usage peaked to 84 m^3/hr due to a leakage in the sub header
- High flow alerted the remote operator on his cell phone, and local operators were able to bypass the line and avoid huge wastage and cooling water



Optimum Energy Utilization

Electrical Consumption is considerably reduced, and Chiller Plant efficiency has improved from previous years average from 0.91 kW/TR down to 0.86 KW/TR leading to 5.5 % cost reduction to QF



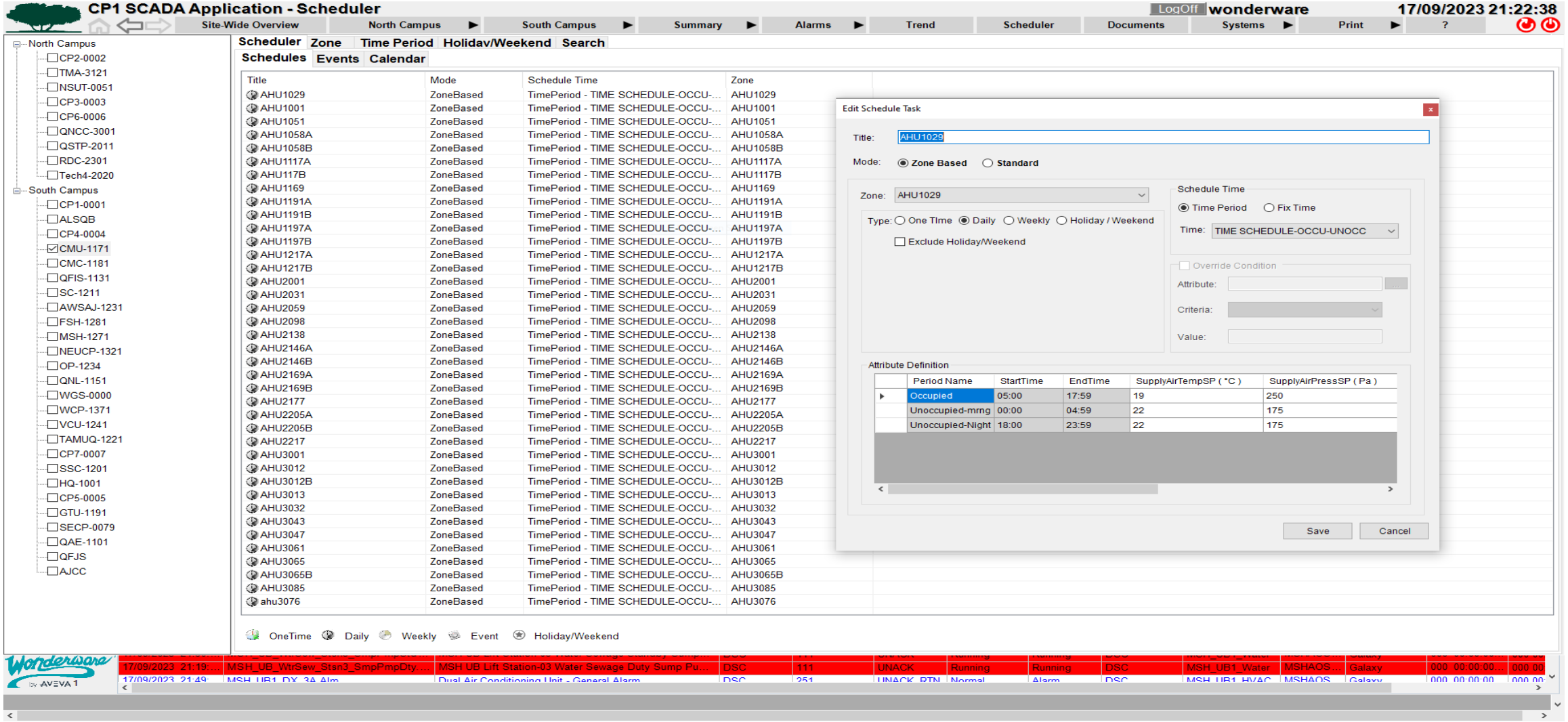
- Performance of the District Cooling Plants and Energy Transfer Stations are continuously monitored 24/7
- Real time diagnostics of all operating systems and equipment for higher reliability and lower operating costs

Planning and Scheduling

Scheduler is a calendar-based programming tool that allows a user to manipulate tag values. It can be used to create a sequence of automatically executed commands.

- The Time Scheduler is used to manage the lighting, heating and other sub systems in a building, providing benefits such as automated services
- Simple on/off commands, multi-state and multiple tag variations can be configured
- Scheduler allows exchange of data between control system devices related to the establishment and maintenance of dates and times at which specified output actions are to be taken
- Interoperability in this area permits the use of date and time schedules for starting and stopping equipment and changing control setpoints as well as other analog or binary parameters
- Scheduler provides different configuration and type of events. Schedule can be time based or condition based
- When the event condition or specified time is met, scheduler writes the user specified value to the attributes/tag name

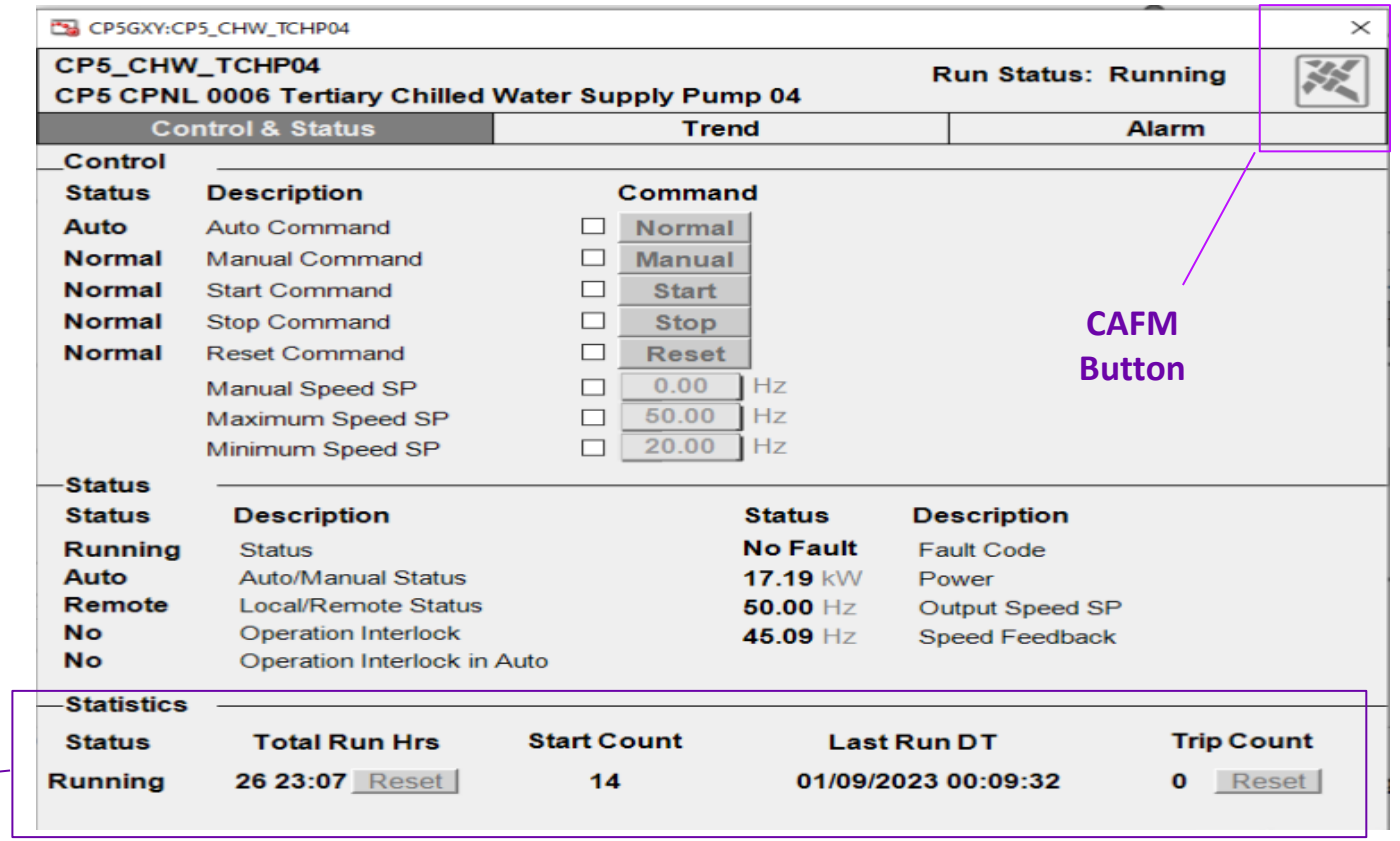
Scheduler



Run Hours + Statistics + CAFM Integration

AOC 2023 Integration with Computer Aided Facility Management (CAFM) enables Facility Managers to plan, execute and monitor all activities involved in reactive and planned preventative maintenance, asset management and operational facility services.

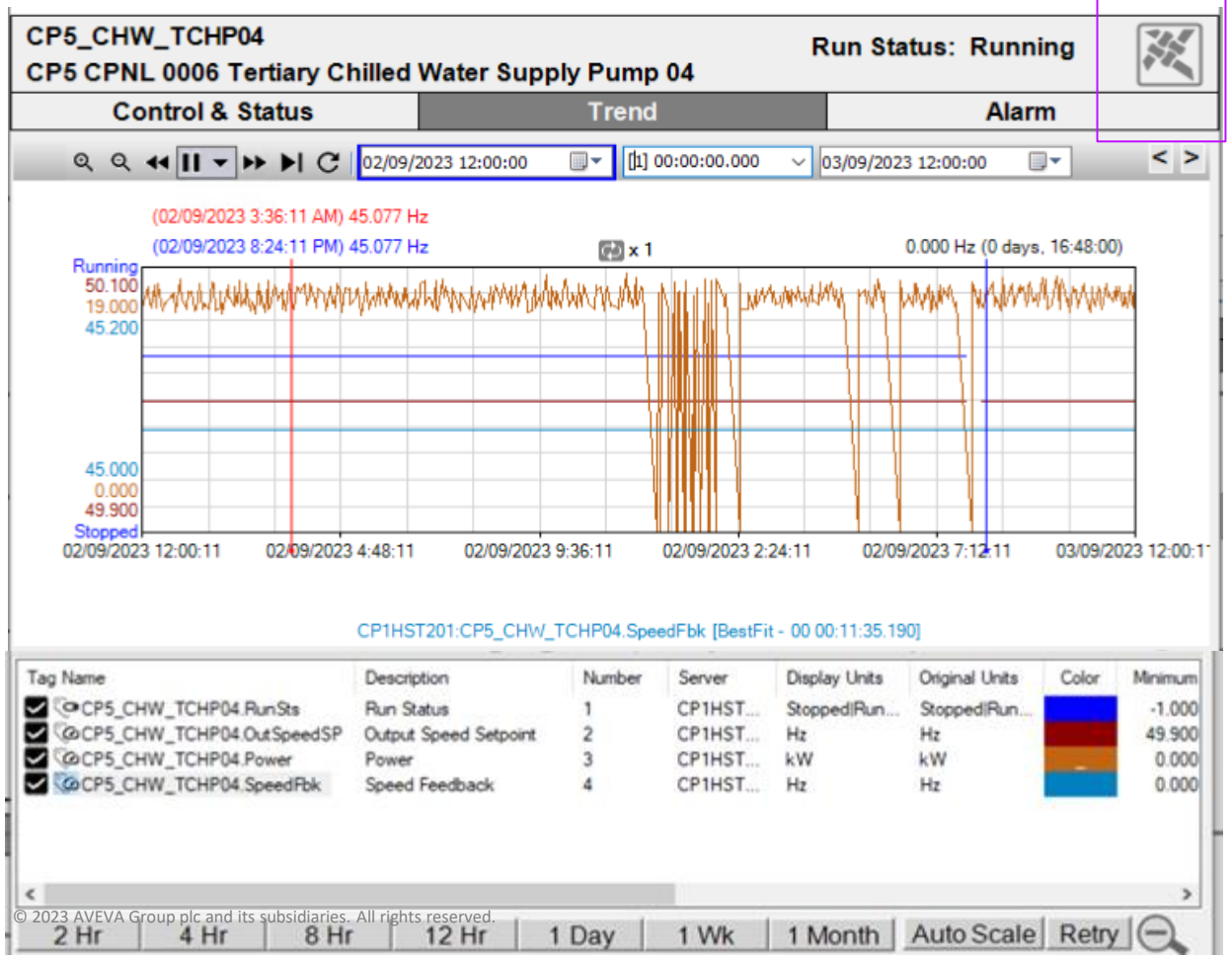
- Faceplate can be used for monitoring and controlling equipment
- It also shows statistical information like
  - Equipment Status
  - Equipment Total Run hours
  - Start Count
  - Last Run date
  - Trip Count

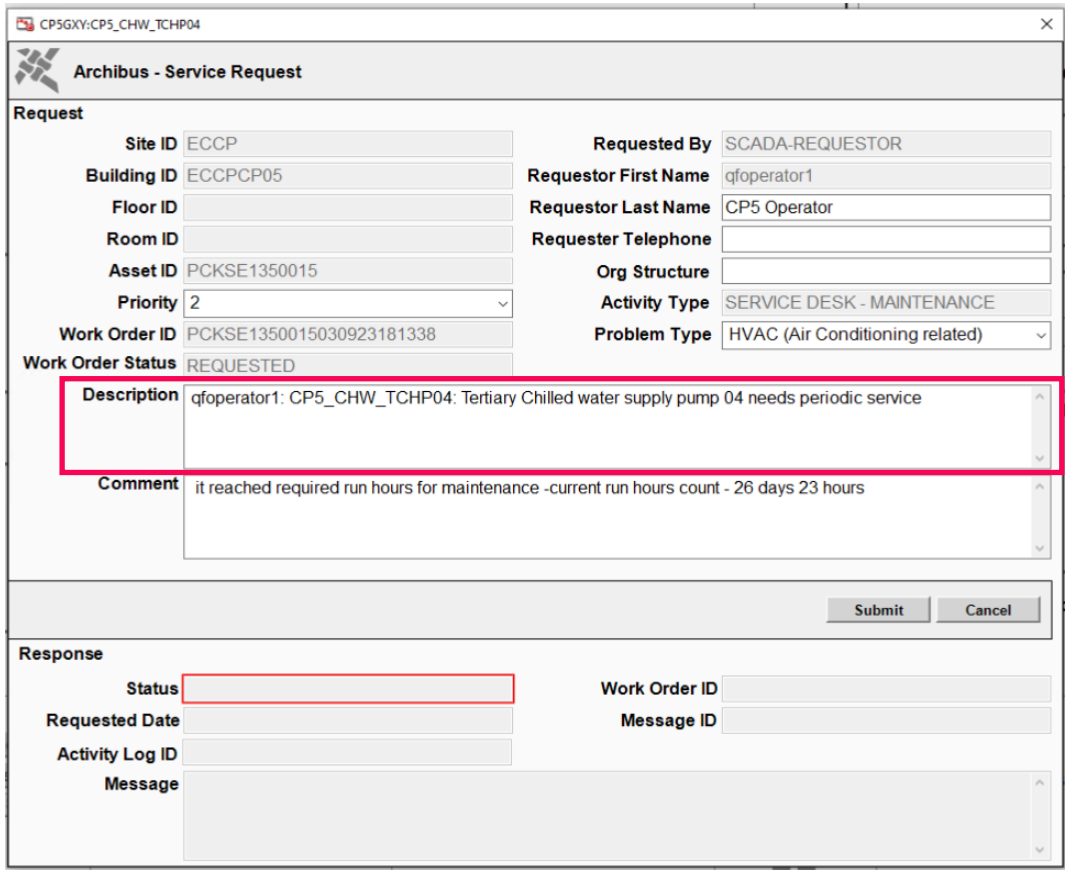


Raising Work Request straight from Equipment faceplate

During PPM users can reset the run count & trip count to analyze the running conditions of the equipment, if certain conditions reached user can raise work request to service the equipment by clicking CAFM button available on the faceplate.

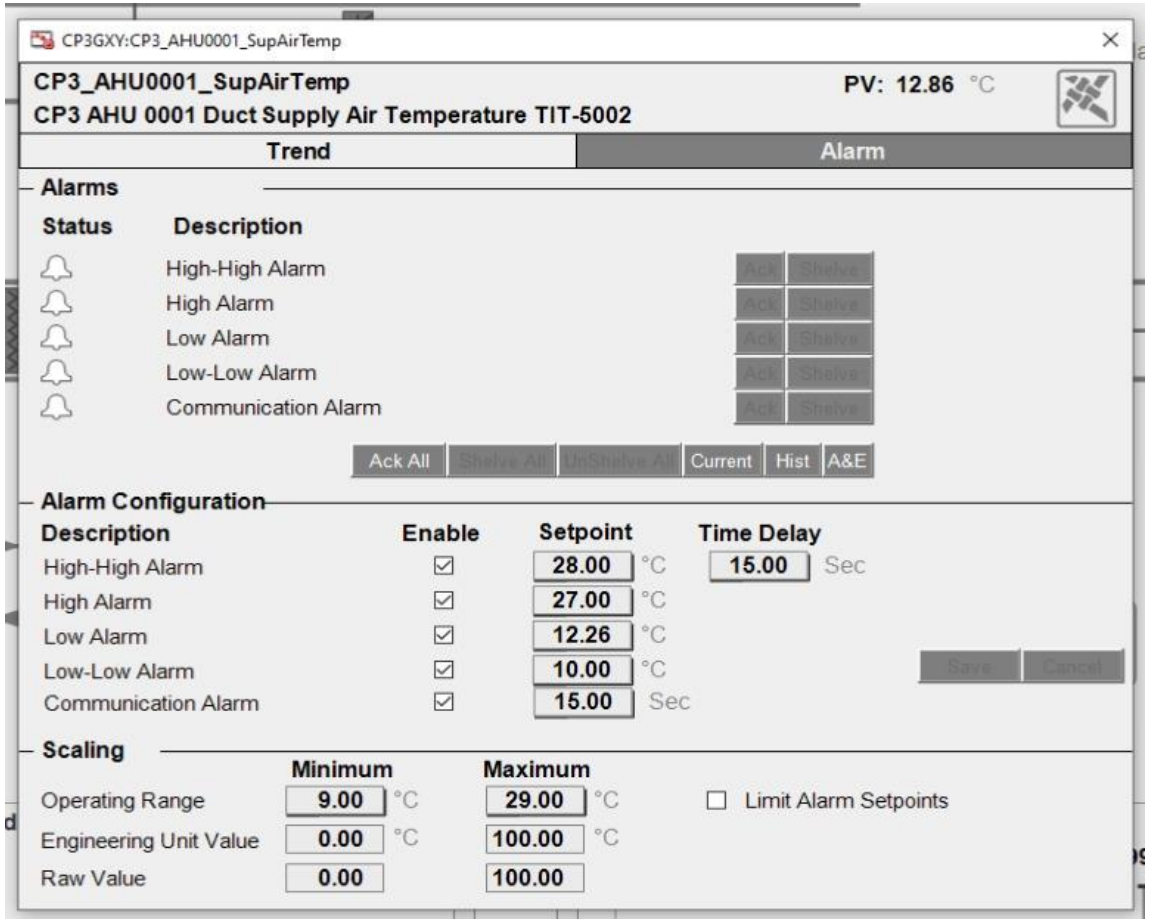
CAFM Button

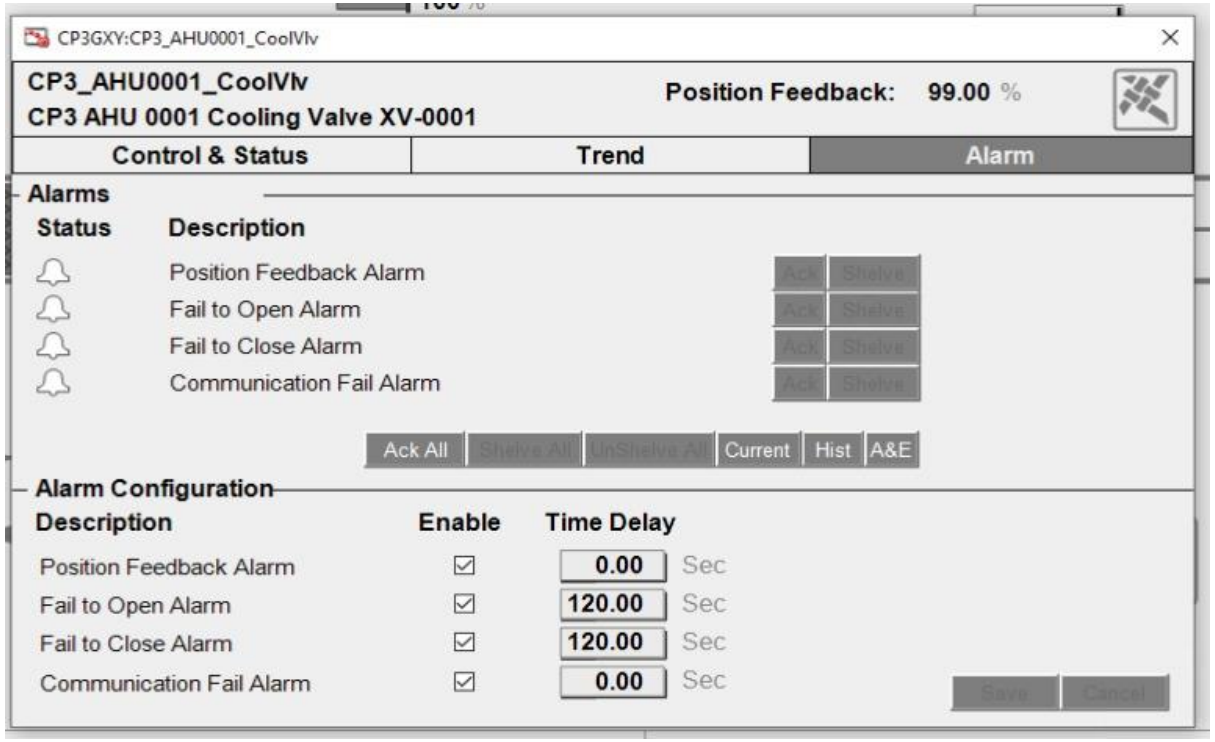




Equipment Alarms

The Operator can easily configure the supervisory Alarms, acknowledge them and take immediate action





Project Goals are Achieved

The implementation of a Unified Operation Platform by means of AOC 2023 is the corner stone for the transformation of Education City into a SMART City.

- Qatar Foundation has achieved 2 State of the Art Central Command Centers to Monitor and Control 45+ facilities at Education City.
- The achieved key goals are:
  - Reduction of Education City carbon footprint through optimum energy consumption
  - Reliable and redundant operation solution
  - Secure – AVEVA cyber security standards , QF OT firewall
  - Accessible from anywhere using InTouch Access Anywhere
  - Fully Documented System
  - Scalable Platform for future expansion
  - Easy operation & Easy to train operators
  - Operation excellence using better reports, alarm management, trends and CAFM integration
  - Energy consumptions controls and trend data availability

Future enhancements of the system

As future enhancement to the Unified Operating Platform QF is looking to implement

- Asset Performance Management
- Energy Management solutions
- Smart meter integration with AOC 2023
- Future expansion of SCADA to monitor & control of other facilities like QA Sidra, Education City Stadium, etc.

SMART CITIES & INFRASTRUCTURE | QATAR

Reduction of Education City carbon footprint through optimum energy consumption

Challenge

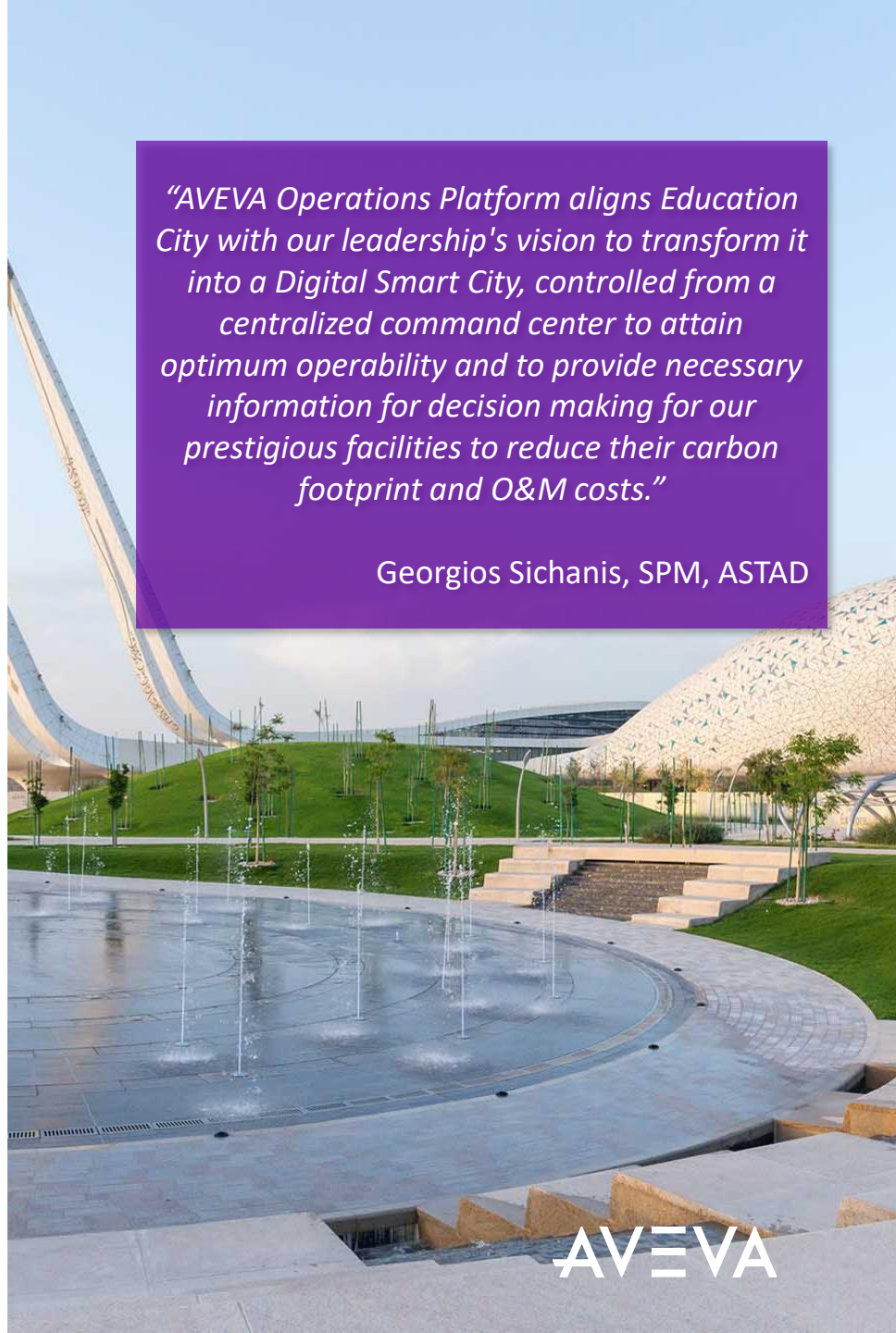
- 12 sq km campus with 45+ buildings including educational, hospital, recreational, industrial, and sports facilities.
- Diverse makes and models of existing controls across facilities with inconsistency visualization, trending, and reporting interfaces.
- Difficulty to control and monitor all operations from centralized control rooms.

Solution

- Deployed AVEVA Operations Control to streamline process visibility and centralized control. Utilizing a high availability architecture design enabling operation from two command centers interconnected throughout all facilities.

Results

- Centralized control and independent monitoring & Control for over 45+ facilities
- Better visibility to information has led to 5.5 % reduction in energy consumption, optimum energy utilization, and enabled more reliable operations performance
- Corner stone for smart city transformation at QATAR Foundation Education City through a unified operation platform
- Streamlined operator training due to standardized design and function



"AVEVA Operations Platform aligns Education City with our leadership's vision to transform it into a Digital Smart City, controlled from a centralized command center to attain optimum operability and to provide necessary information for decision making for our prestigious facilities to reduce their carbon footprint and O&M costs."

Georgios Sichanis, SPM, ASTAD

Team Members Acknowledgment

Distinctive Appreciation goes to the professional AVEVA team members who have successfully delivered the EPC of SCADA System for Qatar Foundation at Education City

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- Mohamed Ismail
- Jeremiah Manalastas
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- Lakshminarayana Rao
- Hari Krishna Chalumuri
- Akshita K
- Siva Parvati V
- Bogati Naga Pushpa
- Purwa Nishikant
- Michelle Klein
- Aravind Deep
- Dana Childs
- Krishna Kant
- Dhruv Naik
- Karan Modgil
- Pulla Rao
- Venkat
- Sandeep Deekonda
- Lalit Yadav
- Sanjiva Reddy
- Sai Teja

Take Away Quote

"Alone we can do so little, TOGETHER WE CAN DO SO MUCH." By Helen Keller